



Young, G., O'Sullivan, A., and Gibb, K. (2010) Northern Ireland Housing Market Areas. Project Report. Northern Ireland Housing Executive, Belfast.

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NORTHERN IRELAND HOUSING MARKET AREAS

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Acknowledgements

The research team would like to acknowledge those who kindly offered their time and expertise through structured discussions and making data sources available to enable the research team to gain a comprehensive insight into the housing market in Northern Ireland.

Mr S Martin, DSD
Mr D Marshall, NISRA
Ms B Muldoon, NISRA
Mr S Fitzpatrick, CSA
Mr I Raphael, DRD
Mr P Mullaney, DOE
Ms L Brown, University of Ulster
Prof S McGreal, University of Ulster

The research team would also like to thank the Northern Ireland Housing Executive for their efforts in securing data access and providing feedback and support on the project.

Esther Christie, Stephen Semple and all in Area Planning Teams, Northern Ireland Housing Executive.

Joe Frey and Patrice Carmichael, Research Unit, Northern Ireland Housing Executive.

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executive summary

- This report presents the findings of a study into the structure of housing market areas (HMA) across Northern Ireland.
- The study was commissioned by the Northern Ireland Housing Executive in order to provide a suitable spatial framework for subsequent housing analysis and strategy development.
- A housing market area is defined as a geographical area where most people both live and work and where most people moving home (without changing job) seek a house.
- HMA can overlap, and often do not marry well with local authority boundaries. Moreover, they are dynamic and HMA boundaries can change over time.
- The main data used in this study were: Travel To Work Area (TTWA) boundaries produced by the Office of National Statistics; market area boundaries produced by Land and Property Services; 2001 Census data for both Northern Ireland and for the Republic of Ireland, Central Health Index (general practitioner registration) data for 2004-2007, survey evidence on household movement patterns from questions included in the May and September 2008 editions of the Northern Ireland Omnibus Survey, and the expert knowledge of key stakeholders.
- Broadly, the central approach adopted to defining HMA involved first examining the suitability of 2001 TTWA commuting boundaries for this purpose by calculating their degree of 'self containment' using housing migration-based Census data, and subsequently amending these where appropriate based on local area movement flows derived from Central Health Index (CHI) data. The final HMA boundaries also take survey data findings and the key stakeholder views on the initial proposals into account.
- A threshold of 67% for self-containment was used for determining if a TTWA was suitable for use as a HMA. This threshold is consistent with that used to identify TTWA in Northern Ireland and is consistent with practice elsewhere in the UK. In making subsequent amendments to determine the final HMA boundaries, a local area was generally concluded to be part of a wider HMA if migration flows between the two were greater than 10%, which is also consistent with practice elsewhere. However, to reflect the distinctive nature and much greater size of Belfast, the threshold used for classifying residential migration flows between it and other areas was set at 20%.

-
- On the basis of the analysis conducted we have concluded there are 11 major HMAs operating across Northern Ireland:
 - Over time the **Belfast** HMA has been extending its influence northwards and southwards into adjacent TTWAs. It now includes all of Larne local government district (LGD), and all but 1 ward of Antrim LGD
 - To the south of the Belfast HMA lie the two distinctive housing market areas centred on **Craigavon** and **Newry** respectively, although both are subject to some degree of overlap with the Belfast HMA.
 - The **Ballymena** housing market is more tightly drawn than the corresponding TTWA, and is subject to growing influence from the Belfast housing market
 - The **Coleraine** housing market extends beyond the Coleraine TTWA and includes the whole of Coleraine LGD and almost all of Ballymoney LGD, and Moyle LGD. However a few more remote wards in the south of both LGDs remain somewhat more connected to the Ballymena housing market.
 - The housing market boundaries of both **Derry** and **Strabane** are aligned with their respective TTWA's.
 - The four TTWA's covering **Omagh**, **Mid-Ulster**, **Dungannon** and **Enniskillen** respectively each provides a reasonable approximation of the respective overarching housing market areas in this part of Northern Ireland.
 - However, it is also important to point out that there are some rural areas and communities in some of these proposed housing market areas that show very little connection to the nearest local employment centre or elsewhere in Northern Ireland. Although for practical reasons it makes sense to include them in a housing market area, we would caution that future analysis and policy should take account of the unaligned character of these localities.
 - The extensive consultation carried out with stakeholders from a wide range of policy, practice and academic backgrounds. This demonstrated broad agreement with the approach taken and the specific boundaries derived through this study.

introduction

This report presents the findings of a study into the structure of Housing Market Areas (HMAs) across Northern Ireland. The study was commissioned by the Northern Ireland Housing Executive in order to provide a suitable spatial framework for subsequent housing analysis and strategy development.

The report is structured as follows:

- In section 2, we explain the background to and context for the study. This section also summarises the research strategy used to define HMAs.
- Section 3 describes residential movement patterns within Northern Ireland using data covering different periods from 2000 to 2008.
- Sections 4 to 8 look in detail at the structure of HMAs in different parts of the province. Collectively, these cover Northern Ireland as a whole.
- Section 9 presents and assesses the views of key stakeholders on the proposed HMAs.
- Section 10 summarises the main outcomes of the research and makes a number of recommendations regarding next steps.

In addition, the report contains a number of appendices:

- Appendix 1 summarises the strengths and limitations of the main methods used to define housing market areas across the UK.
- Appendix 2 details a number of issues relating to using Census data for exploring HMA structure in Northern Ireland.
- Appendix 3 discusses the Central Health Index (CHI) and provides a more technical exposition of the method used to analyse CHI data within the study.
- Appendix 4 provides a number of supporting tables that summarise Census 2001 migration flows.
- Appendix 5 includes several tables that summarise CHI migration flows.

background, context

& study methods

Why is the definition of housing markets of relevance?

Politicians and public administrators demarcate geographic areas for a variety of reasons. Often this relates to the delivery of policy priorities or to the collection of data. Such areas do not usually figure largely in the minds of people going about their everyday business, although this does not always matter. However sometimes it can matter a great deal, and housing is a policy area where this can be the case.

Research has shown that people have both implicit and explicit understandings of the spatial structure of local housing systems and these do not always conform to formal and administrative boundaries imposed by national and local government. In these circumstances, failing to recognise the 'functional' geographies that people use to inform their housing decisions can lead to policy outcomes at variance to those expected or sought. For instance, land release to meet housing demand may have unintended consequences if the site is in a different functional market area to the administrative area governing the planners' decisions. For this reason, understanding how people see local housing areas in spatial terms - identifying Housing Market Areas (HMAs) - is an important input to effective policy action.

The Policy Context

Several considerations led to the commissioning of this project.

First, the Semple Affordability Review (Semple, 2007), and parallel research by the Universities of Glasgow and Ulster (Gibb, et al, 2007), both showed the need for a clearer analytical basis for understanding the operation of local housing markets in Northern Ireland. A further study recommended that Northern Ireland embrace current Department of Communities and Local Government (DCLG) housing market assessment methodology and position housing needs assessment work already carried out in Northern Ireland within this broader framework (Palmer, 2007). This, in turn implies a requirement to define and agree housing market areas.

Second, the on-going process of review of public administration, which is reorganising the local authority map in Northern Ireland, reinforced recognition of a need to understand the structure of housing markets in Northern Ireland.

Third, there is continuing interest in the use of developer contributions for increasing affordable housing provision in Northern Ireland, and in ensuring this mechanism operates with the grain of housing markets.

In addressing these agendas this project also reflects a more general policy concern to plan housing market and non-market programmes effectively, and recognition that this requires appropriate housing market geographies.

What is a Housing Market Area?

A housing market is typically conceived to operate across a spatially defined area that reflects the housing preferences of most households searching for housing without changing employment. A housing market area can therefore be defined as the geographical area where most people both live and work and where most people moving home (without changing job) will have sought a house (O'Sullivan et al, 2004).

Because households often take little account of local authority boundaries when searching for housing, many urban HMAs operate across two or more local authority boundaries. Moreover, in contrast to administrative areas, HMAs are rarely coterminous and most exhibit some overlap with and influence from adjacent HMAs.

HMAs are dynamic and their boundaries change over time. Many urban HMAs have expanded in the past decade to include previously unconnected rural areas. This trend reflects many inter-linked factors but four stand out:

- Commuting has become more affordable, due to a rise in disposable incomes and a fall in the real cost of car use.
- Travel times have reduced, because of improved transport infrastructure.
- Households have become more willing to commute over longer distances to secure a suitable place to live.
- Land-use plans have influenced the spatial direction in which HMAs have expanded.

The concept of a HMA is not by any means a straightforward one, and most major HMAs will contain recognisable sub areas or submarkets. This means that judgement is necessarily required in identifying HMAs, and there may be legitimate cause for disagreement as to the boundaries of specific HMAs in some instances.

Alternative approaches for establishing HMA

Three main statistical approaches are used to identify HMA boundaries¹:

- Existing geographical boundaries computed for other purposes, in particular Travel to Work Areas (TTWAs) that reflect spatial concentrations of commuting flows between home and place of work, are often used to approximate HMAs.

¹ The conceptual and data related issues involved in defining and measuring HMA were fully set out in a discussion paper we prepared for the Northern Ireland Housing Executive at the outset of this project in March 2008. Appendix 1 is based on that paper and provides a brief summary of the strengths and weaknesses of the main approaches to HMA definition.

- Exploration of how 'self contained' particular areas are, in terms of the proportion of people or households that move within an area relative to the number that move into or out of it. Thus a HMA is considered to exist when a specified threshold of 'self-containment' is met or exceeded.
- Exploration of the proportion of people or households that move between two places, in order to establish how 'linked' they are. Again a threshold is set to determine whether these flows are significant or not.

In practice the method (or methods) adopted in different parts of the United Kingdom has typically been pragmatic, and shaped by the local availability of appropriate data².

Data Availability in Northern Ireland

The Office for National Statistics (ONS) computes TTWAs for the UK as a whole. New TTWAs based on the 2001 Census were released in October 2007. Of the 243 TTWAs identified, 11 are located in Northern Ireland³. The number of TTWAs identified in Northern Ireland using 2001 Census data is the same as that identified using 1991 Census data⁴.

A defining feature of TTWA boundaries is that they must be relatively self-contained, contiguous and non-overlapping areas that cover the whole of the United Kingdom. Most 2007 TTWAs are based on a minimum self-containment threshold of 67% and a minimum economically active population of 25,000⁵. The Northern Ireland 2007 TTWAs are aggregations of Super Output Areas.

The availability of TTWA information means the first approach to HMA definition noted above was open to us. In addition, the 2001 Census form asked people to stipulate where they lived a year prior to Census night, which means it was also possible to apply the second approach to identifying HMAs for Northern Ireland using Census data. Appendix 2 provides technical details on the strengths and weaknesses of the Census data used, and the implications this had for the analysis conducted.

² In addition, there have also been some recent attempts in England to use house price data to define HMAs (see for example University of Sheffield, 2005). While this approach is an interesting one, it relies on the fairly heroic assumption that within a HMA the same product will attain a very similar price and that variations in prices for 'equivalent' dwellings can therefore be used to identify HMAs. More generally, it requires consensus regarding the most appropriate model to track house prices, including the property attributes (such as size, type, quality and layout) and locational attributes (such as quality of area amenities) that should be controlled for. A further general limitation is that there are no clear and widely accepted norms for moving from an analysis of price distributions to the definition of specific HMA. In the context of Northern Ireland, as comprehensive data on property transactions that contains price, property, sale type and locational attributes and covers a number of years is not currently available, the approach is of academic interest only for current purposes.

³ The 11 TTWA in Northern Ireland are based upon Ballymena, Belfast, Coleraine, Craigavon, Derry, Dungannon, Enniskillen, Mid-Ulster, Newry, Omagh and Strabane. A map of the TTWAs covering the whole of the UK can be found on the following web page: <http://www.statistics.gov.uk/geography/ttwa.aspx>

⁴ However, there were changes to the spatial extent of some TTWA boundaries. The largest changes affect the 1991-based Newry TTWA, Craigavon TTWA and the Belfast TTWA. As ONS (2007) note the Newry TTWA has gained area "at the expense of Craigavon and to a lesser extent the Belfast TTWA. Although the 1991-based TTWA named Belfast has lost area in this southern part it has gained area at the expense of the Ballymena TTWA".

⁵ In rural areas TTWA are based on a resident workforce of 3,500, and a minimum of 75 percent of journey-to-work trips.

However, Census data is not sufficient to examine residential movement flows between areas for the purpose of defining HMAs, primarily because it does not give sufficient numbers of observations on which to base analysis.

In Scotland, Land Registry information on housing transactions provides a time series data set that is routinely used to explore the movement patterns of homeowners, but this is not available for Northern Ireland. However, a reasonable alternative is the Central Health Index (CHI) dataset. This dataset provides information on an ongoing basis of people changing registration with a general practitioner (GP). The Northern Ireland Statistics and Research Agency (NISRA) use this data to estimate internal migration for Northern Ireland, and NISRA provided an anonymised version of the dataset for the period September 2004 to December 2007 for the purpose of our study. The contents of the CHI and its strengths and limitations are discussed in detail in appendix 3.

Investigation of other potential data sources indicated that the Republic of Ireland Census, which gathered useful contextual information on the numbers of people who moved from Northern Ireland to the Republic of Ireland in the year prior to Census night and the county they moved to and from, was also of potential value for our purposes⁶.

In addition, discussions with NIHE confirmed that up to date survey evidence on household movement patterns and motivations might be of value in supplementing statistical analysis of the Census and CHI datasets. A suite of questions was therefore agreed for inclusion in the May and September 2008 editions of the Northern Ireland Omnibus Survey⁷. These questions explored reasons for moving from previous house, areas considered prior to moving, reasons for choosing current house, future moving intentions and areas that respondents would consider moving to.

Study Method

Our analysis began from consideration of the 2001 Census based TTWA, and whether these provided a suitable basis for also identifying HMAs in Northern Ireland. This was achieved by examining Census based movement patterns between TTWAs and between local government districts (LGDs), supplemented by analysis of movements between selected centres of employment. In addition to examining the migration patterns of the population as a whole, we also examined migration patterns for selected sub-groups.

In order to undertake this analysis, datasets for TTWAs, LGDs and employment centres were built by combining ward level Census Special Migration Statistic (SMS) output tables⁸.

⁶ Discussions with NISRA confirmed that the Continuous Household Survey, the Labour Force Survey, Northern Ireland Life and Times Survey, and the Northern Ireland School Census were unsuitable for exploring residential movement patterns at the sub-national level. Various datasets administered by the Driver and Vehicle Agency (DVA) and the Department of Works and Pensions (DWP) were also found not to be suitable and/or were not readily accessible.

⁷ The May 2008 Survey achieved 1,237 interviews, of which 379 were households that had moved house in the last 5 years. The number of moving households in September Survey was 409.

⁸ The reason for using SMS Census ward level outputs are discussed in appendix 2, but one of the main reasons was to ensure consistency with CHI analysis outputs

Consistent with the threshold used by ONS for initially defining TTWAs, it was concluded that a TTWA provided a reasonable representation of the underlying HMA in 2001 if the following two criteria were met:

- More than 67% of residential moves (for the population as a whole and for the selected sub-groups) occurred within a TTWA rather than originating from outside it. (This is known as origin-based self-containment, and is formally calculated as the number of migrants that moved within each TTWA divided by the total number of migrants that moved to the TTWA that originated from somewhere in Northern Ireland).
- More than 67% of migrants (for the population as a whole and selected sub-groups) that previously lived in the TTWA moved within the TTWA rather than moved to a destination outside it. (This is known as destination-based self-containment and is formally calculated as the number of migrants that moved within a TTWA divided by the total number of migrants that previously lived in the TTWA that moved to somewhere in Northern Ireland).

As demonstrated in sections 4 to 8 of this report, analysis of Census movement patterns confirmed that while TTWAs generally provide a reasonable approximation for housing market areas in Northern Ireland, some adjustments were required. Moreover, a number of localised areas showed evidence of significant overlap at the margins of adjacent HMAs.

The next step involved examination of migration flows using the CHI data. For this analysis, we focused primarily on flows between local areas (defined on the basis of wards or clusters of wards) and the wider TTWA (except the local government district) in which each local area was situated. This was supplemented by analysis of migration flows from a number of employment centres to surrounding settlements. The detail of this analysis is set out in appendix 3.

With the exception of the Belfast TTWA and the Belfast employment centre, a 10% threshold was generally used to demonstrate significance for establishing inclusion of a local area in a wider HMA⁹. For the Belfast TTWA and employment centre a higher threshold of 20% was generally applied to reflect the distinctive nature of the Belfast housing market and to take account of the much greater size of the population in the wider Belfast region.

The findings from the CHI data analysis were used to both confirm HMA initially identified on the basis of Census data, and to establish whether there had been any significant local changes in the proposed HMA boundary over time.

Further insight was also sought through use of Republic of Ireland Census data to explore cross border movement patterns, and more generally, as already noted, through examination of the results of the Omnibus survey.

The HMA identified by this range of analysis were then validated through interviews with key stakeholders.

⁹This is consistent with practice elsewhere in the UK

recent migration patterns in northern ireland

Introduction

In this section we look in general terms at recent migration flows within Northern Ireland, drawing on Census Special Migration Statistics and the Central Health Index (CHI) as well as other sources of data noted in section 2. Consistent with Census usage, the term 'migrant' here refers to someone that has changed address, regardless of distance moved.

Migration patterns at the time of the Census

According to 2001 Census Special Migration Statistics, just over 157,000 Northern Ireland residents were living at a different address in April 2001 compared to a year earlier. As table 3.1 shows, this figure includes over 10,000 people that had 'no usual address' one year ago, over 11,000 migrants that had moved from other parts of the UK and over 7,000 migrants that had moved from outside the UK. In addition, almost 30,000 individuals had moved out of Northern Ireland to elsewhere in the UK.

Table 3.1: Summary of Census 2001 migration numbers by TTWA

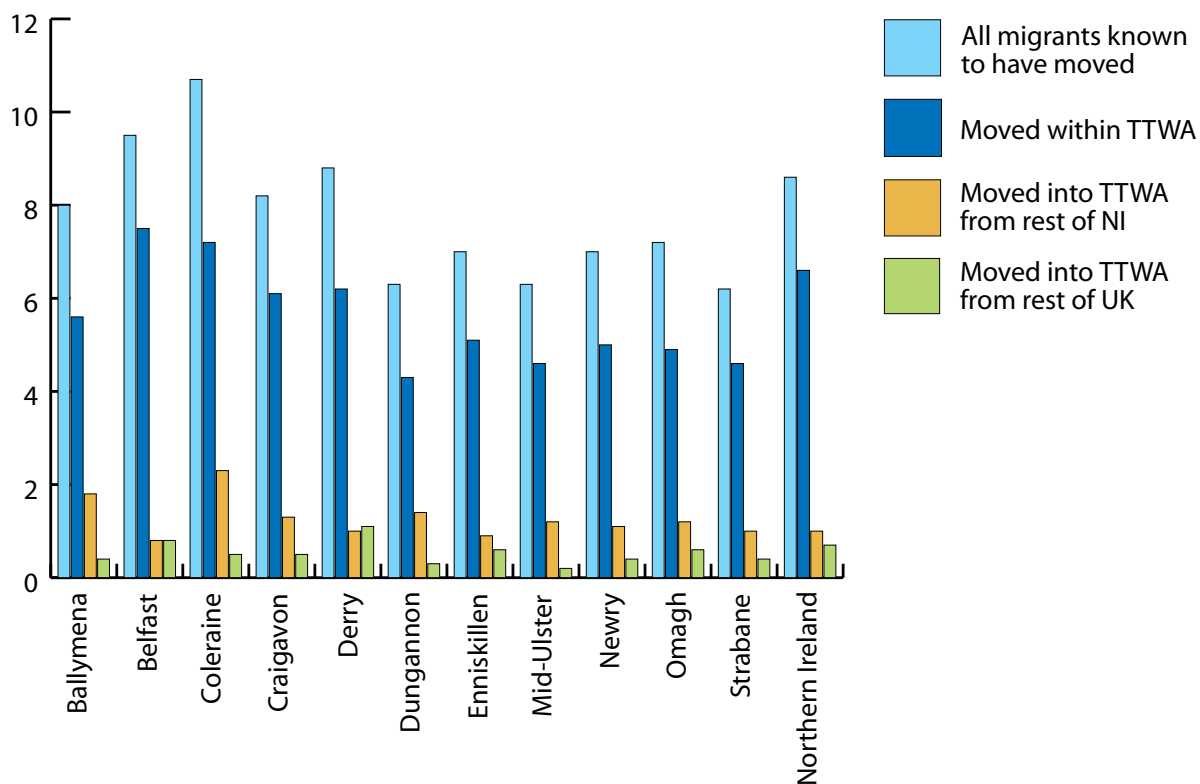
	All persons	Lived at same address one year ago	All migrants (1)	Moved within TTWA	Moved into TTWA from rest of NI	Moved into TTWA from rest of UK	Moved into TTWA from outside UK	No usual address 1 year ago	Moved out of TTWA to elsewhere in UK
Ballymena	74,092	67,810	6,282	4,185	1,320	300	109	368	1,767
Belfast	854,763	767,761	87,002	64,017	6,833	6,729	4,048	5,375	12,536
Coleraine	87,688	77,749	9,939	6,357	2,002	477	538	565	2,067
Craigavon	141,408	128,894	12,514	8,655	1,820	645	449	945	2,798
Derry	139,579	126,331	13,248	8,637	1,341	1,577	698	995	2,810
Dungannon	49,493	46,041	3,452	2,127	669	141	188	327	1,245
Enniskillen	59,506	55,026	4,480	3,008	528	361	260	323	1,203
Mid-Ulster	73,656	68,649	5,007	3,412	879	174	161	381	1,286
Newry	120,973	111,893	9,080	6,101	1,292	538	482	667	2,180
Omagh	47,952	44,276	3,676	2,346	559	277	269	225	1,143
Strabane	36,157	33,700	2,457	1,648	379	129	87	214	737
Northern Ireland	1,685,267	1,528,130	157,137	110,493	17,622	11,348	7,289	10,385	29,772

Source: Census 2001 Special Migration Statistics (aggregated ward tables)

Note: (1) Includes all those that moved within or to TTWA plus persons with no usual address one year ago.

Excluding those that were recorded as having no usual address, 8.6% of all Northern Ireland residents moved in the 12 months prior to April 2001. This was significantly lower than the comparable figure of 10.6% for the UK as a whole. Some 56% of these migrants were residents of the Belfast TTWA, in line with the concentration of the Northern Ireland population (51%) in this area.

Figure 3.1: In-migration flows in 2001 as a percentage of the population



Source: Census 2001 Special Migration Statistics (aggregated ward tables)

Figure 3.1 shows the proportion of residents that moved within or to each TTWA. Looking across the 11 TTWAs:

- Belfast and Coleraine had the highest proportions of migrants at 9.5% and 10.7% respectively. This pattern reflects the UK wide tendency for young adults to gravitate towards university towns.
- The 3 predominately urban TTWAs of Derry (8.8%), Ballymena (8.0%) and Craigavon (8.2%) all had migration rates close to the Northern Ireland average.
- The 6 more rural TTWAs of Dungannon, Enniskillen, Mid-Ulster, Newry, Omagh and Strabane had migration rates ranging from 6% to 7%.

A substantial proportion of individuals move as part of a larger household. As table 3.2 indicates, there were over 36,000 households where all the residents had moved from the same previous address in the 12 months prior to the Census. A further 33,000 groups of migrants had moved over this period¹⁰.

Table 3.2 shows that 83% of 'other moving groups' were comprised of a single person compared to 42% of wholly moving households. The former group of migrants were also more likely to be represented by someone aged less than 25, a full time student and a private renter than wholly moving households and non-moving households. Migrants classified as 'other moving group' were also more likely to be long distance movers than wholly moving households.

Table 3.2: Estimated numbers of moving groups that moved within Northern Ireland by sub-group and household size, 2001

Group size (Persons)	All moving groups	Wholly moving group	Other moving group
	(%)	(%)	(%)
1 person	61	42	83
2 persons	20	26	13
3+ persons	19	32	4
All	100	100	100
Base	69,249	36,247	33,002

Source: Census 2001 Special Migration Statistics (aggregated ward tables)

Recent migration patterns

Migration rates typically ebb and flow in accordance with economic and housing market cycles. CHI evidence summarised in table 3.3 illustrates that in the 3 years to December 2007:

- The average annual internal migration rate for Northern Ireland was, at 9.7%, higher than that recorded in the Census¹¹.
- On average there were 170,000 internal migrants over each of these 3 years compared to a minimum of 128,000 in the pre Census year, a difference of up to 42,000 persons¹².

Similarly, NISRA (2008) population estimates indicate there was considerable growth in the flow of migrants from Britain and abroad between 2001 and 2007.

¹⁰ Basically a household where someone in that household lived elsewhere a year previously is classed as a moving household. If everyone in the household lived at the same previous address it is classed as a wholly moving household. Any other permutation is classed as a partly moving household. Collectively, different classes of moving households are also referred to as moving groups. Analysis of moving groups is an important aspect of the following sections, and appendix 2 describes wholly moving groups and other moving groups in more detail.

¹¹ As discussed in appendix 2, the low rate of internal migration in 2001 restricted the spatial level at which valid findings generated from the Census 2001 special migration statistics dataset can be reported.

¹² In reality the difference between CHI and Census counts will be lower because the Census, in contrast to the CHI, excludes students and civilians living in communal establishments. In addition, most of those recorded as 'no usual address one year ago' probably moved within Northern Ireland.

Table 3.3 also confirms that there remain significant variations in the numbers of internal migrants across the 11 TTWAs and that over half of all migrants continue to move within or to the Belfast TTWA.

Nonetheless, internal migration rates have increased in every TTWA. The rate of increase has been highest in the TTWAs of Dungannon and Mid-Ulster which have experienced proportionately faster population growth than Northern Ireland as a whole.

Most other TTWAs that experienced an increase greater than 2.5% in internal migration rates also experienced above average rates of population growth. However in the case of the Derry and Strabane TTWAs, high rates of local population churn were the single most important factor.

Table 3.3: Annual average number of migrants that moved within Northern Ireland and associated internal migration rate by TTWA, 2005-7

TTWAs	CHI Annual average number of migrants moving within NI	CHI average annual internal migration rate	Census internal migration rate	Difference in % terms
Ballymena	6,890	8.8	7.4	1.4
Belfast	86,321	9.8	8.3	1.5
Coleraine	9,300	10.2	9.5	0.7
Craigavon	15,468	10.4	7.4	3.0
Derry	14,665	10.0	7.1	2.9
Dungannon	5,026	9.6	5.6	4.0
Enniskillen	5,839	9.3	5.9	3.3
Mid-Ulster	7,821	10.0	5.8	4.2
Newry	10,869	8.6	6.1	2.5
Omagh	4,431	8.7	6.1	2.6
Strabane	3,347	8.9	5.6	3.3
Northern Ireland	169,977	9.7	7.6	2.1

Source: Central Health Index, 2005-7

Note: Internal migration rates refer to the number of migrants that moved within or to each TTWA that previously lived within Northern Ireland as a proportion of the estimated TTWA population

Further analysis suggests that internal migration rates have fallen back since they peaked in the early part of 2007, and NISRA have intimated that they continued to fall sharply during 2008 as the UK economy moved into recession. Likewise, Home Office and DWP figures published in February 2009 also suggest that the in-flow of international migrants has fallen.

Cross border flows between Northern Ireland and Republic of Ireland

From the perspective of defining housing markets, the most important external migration flows are those between Northern and Southern Ireland. Evidence from the Republic of Ireland Census, which is summarised in table 3.4, suggests that:

- Just 2 out of every 1,000 Northern Ireland residents moved to the Republic of Ireland in the year prior to the 2002 Census and the 2006 Census
- Amongst the six counties of Northern Ireland (which is the lowest spatial level at which data is reported) the proportion of residents known to have moved to the ROI is highest for the counties of Derry and Fermanagh. Nevertheless, this involved less than 4 out of every 1,000 individuals in either County.

These findings do not appear to be fully consistent with feedback from stakeholders discussed in section 9, but we suspect that part of the explanation is that ROI Census data under-reports migration inflows¹³.

In terms of the destination of migrants that moved across the border in the year prior to the 2002 or 2006 Census:

- County Donegal and Dublin County and City were the preferred destinations for most migrants that moved from Northern Ireland.
- The Dublin area attracts migrants from all 6 counties. Altogether, 41%, of those who previously lived in County Antrim and 35% of those who previously lived in County Down had moved to the Dublin area. This was also the case for a quarter of those who moved from Armagh and Tyrone and 15% of those who moved from Derry or Fermanagh.
- Two thirds of those who previously lived in County Derry had moved to County Donegal. Over 4 out of 10 former residents of County Tyrone had also moved to County Donegal, presumably reflecting the close proximity between Strabane and the town of Lifford.
- Around half of out-migrants from County Fermanagh moved to the neighbouring Counties of Donegal, Cavan or Monaghan. Likewise, a fifth of out-migrants from County Down moved to County Louth.

The last two bullet points lend some support to local perceptions that housing markets in the south and west of Northern Ireland extend across the border. Unfortunately however, there remains a lack of sufficient data to confirm the exact nature of these linkages

It is less certain that there is any significant overlap between any of the housing markets that operate in Northern Ireland and the wider Dublin area. Information on the profile of individuals that moved to the ROI is not available, but it is probable that a large proportion of the almost 1,900 people that moved to the Dublin area in either of the two pre-census years involved full-time students migrating to a place of study or other adults taking up new employment.

¹³ In 2008 the Central Statistics Office reported that a comparison of the ROI Census 2006 and quarterly housing survey migration figures indicated the Census was underestimating the magnitude of inward and outward migration flows.

Table 3.4: Residents by address 12 months prior to the 2002 and 2006 RII Census

	County Usually Resident 1 year previously			
	2002		2006	
	No	Rate per 1,000 persons	No	Rate per 1,000 persons
County Antrim	982	1.6	843	1.4
County Armagh	223	1.5	312	2.0
County Derry	960	4.1	877	3.6
County Down	516	1.1	461	0.9
County Fermanagh	226	3.9	214	3.5
County Tyrone	392	2.3	336	1.9
Not stated	192	NA	346	NA
Northern Ireland	3,491	2.1	3,389	1.9

Source: Republic of Ireland Census 2002 and 2006 - summary of commissioned table

In terms of inflows from the ROI it had been hoped that the Northern Ireland Omnibus survey would provide some insights. However, the numbers of respondents that stated they had moved from the ROI was too small to produce valid findings¹⁴.

Socio-economic composition of Northern Ireland migrants

Age and gender

There is a clear association between migration and age. As table 3.5 shows, migration flows in the year prior to the 2001 Census followed familiar patterns.

Those aged 16-24 are entering the labour market, often via university or college. In the year prior to the Census, almost 14% of people in this age group moved within Northern Ireland compared to less than 8% of the population as a whole. As a result, the age group accounted for 23% of all migrants that moved within Northern Ireland, increasing to 28% of those who moved across LGD boundaries.

Some 37% of all internal migrants in this age group moved to or within Belfast. Most other areas in Northern Ireland were net exporters of people aged 16-24. The only LGDs other than Belfast with a net gain in people in this age group were Coleraine (which is home to a University of Ulster Campus and the Causeway Institute) and Newtonabbey, which is situated within the Belfast TTWA.

People aged 25-44 are typically pursuing their careers and raising a family. This age group was also over-represented in the migrant population. Although just 10% of individuals in this age group moved in the year prior to the Census, it provided 40% of all cross-boundary migrants, with most of these moves being to neighbouring areas. In particular significant numbers of those that previously lived in Belfast had moved to another area in the Belfast TTWA.

¹⁴ Fewer than 10 respondents that participated in either the May or September Omnibus Survey reported that they had moved from the ROI within the past 5 years.

Table 3.5: Internal migration patterns by age group (persons), 2001

	All persons	All internal migrants (excluding no usual address)		Moved within LGD		Moved into LGD from rest of NI	
	No	No	%	No	%	No	%
All ages	1,685,267	128,115	7.6	90,678	5.4	37,437	2.2
16-24	211,474	29,070	13.7	18,457	8.7	10,613	5.0
25-44	489,196	48,995	10.0	33,980	6.9	15,015	3.1
45+	586,520	19,450	3.3	14,020	2.4	5,430	0.9

Source: Census 2001 Special Migration Statistics (aggregated ward tables)

People aged 45 and above are less likely than younger adults to move. In the 12 months prior to the Census less than 4% of this age group moved within Northern Ireland. Moreover, 70% of those who did moved within the same LGD. Although internal migration rates rise again once people reach the age of 75 or above, this tends to be associated with a desire to live closer to family or to receive care.

CHI evidence suggests that while the numbers of migrants aged 16-24 continued to average between 28,000 and 30,000 a year, the number of migrants aged 25-44 increased from 49,000 in 2001 to 60,000 in 2006 and then jumped to 70,000 in 2007.

Some 53% of internal migrants in Northern Ireland are women. One reason why women have higher migration propensities is that they form the majority of internal migrants aged over 75 years. CHI data indicates that 70% of migrants aged 75 or above are women. However migration flows for men under the age of 30 are also known to be under-reported in both the Census and in CHI data. Outwith these two age groups there are few clear and unambiguous variations in the migration propensities of males and females.

Tenure

The Census collected information on the current tenure of wholly moving households. The Northern Ireland Omnibus survey also collected information on the tenure of those that had moved within the past 5 years.

At the time of the 2001 Census, almost 133,000 households lived in the social rented sector, including almost 10,000 'wholly moving' households that were known to have moved within Northern Ireland in the previous year. Both the Census and the Northern Ireland Omnibus survey indicate that:

- Somewhere between 7.6% and 8.0% of social rented households move to another dwelling each year.
- 86% of social rented migrant households move within their local area.

In addition, the survey findings suggest that few recent movers living in the social rented sector had considered moving elsewhere.

These findings reflect that the movement patterns of social renters are constrained by several factors, including the areas where social housing stock is concentrated and by the allocation policies of social landlords.

Table 3.6: Internal migration of wholly moving households by tenure, 2001

	All households	Wholly moving households (excluding no usual address)		Moved within LGD		Moved into LGD from rest of NI	
	No	No	%	No	%	No	%
All	626,718	36,240	5.8	27,275	4.4	8,981	1.4
Owner	436,215	16,590	3.8	11,115	2.5	5,339	1.2
Social rented	132,931	9,850	7.4	8,510	6.4	1,354	1.0
Private rented	57,570	9,800	17.0	7,650	13.3	2,288	4.0

By contrast, private renters are the most mobile group of households in Northern Ireland. Overall Census data shows:

- 25% of all 'wholly in-moving households' that were renting privately moved within or to the Belfast LGD.
- 50% of all 'wholly in-moving households' that were renting privately moved within or to the Belfast TTWA¹⁵.
- 19% of all 'wholly in-moving households' that were renting privately moved within or to Derry (7%), Coleraine (6%) or Craigavon (6%).

In relative terms wholly moving owner-occupiers are the least migratory household type. However, in terms of absolute numbers, they form the largest share of internal migrants, and account for 60% of all households that moved from one LGD to another.

Evidence on patterns of household mobility from the Northern Ireland Omnibus Survey

The following paragraphs draw on Northern Ireland Omnibus survey findings from May 2008 and more especially September 2008. Although a representative sample was secured through the survey, comparatively few respondents stated that they had changed address within the past five years¹⁶. The findings presented below, should therefore be considered as indicative rather than authoritative.

¹⁵ This is in line with the Northern Ireland Omnibus survey finding that 44% of private renters that moved within the past 5 years lived in the Belfast TTWA, of which around two thirds had come from elsewhere in the TTWA.

¹⁶ The achieved samples of recent movers for the May and September surveys were 379 and 409 respectively.

Profile of recent movers

As table 3.7 shows, a third of householders have lived in their current home for upwards of 20 years. The majority of these households are outright owners and other owner-occupiers. At the other end of the spectrum, a third of households moved to their current home within the last 6 years. Of these 788 households:

- Around 47% live in the Belfast TTWA and 18% live in the Newry or Craigavon TTWA.
- Around 70% live in the urban parts of Northern Ireland, which includes the Belfast Metropolitan area, the Derry Urban Area, the Craigavon Urban Area and other settlements with a population in excess of 4,500.
- Almost half are lone adult (25%) or couple (23%) households.

Table 3.7: Length of time in current property

	May (%)	September (%)
Less than 1 year	7	7
1 year - less than 2 years	6	7
2 years - less than 6 years	18	19
6 years - less than 10 years	14	12
10 years -less than 15 years	13	13
15 years - less than 20 years	9	10
20 years or more	33	32
Total	100	100
base	1,237	1,264

Source: Northern Ireland Omnibus Survey, May and September 2008

The tenure profile of recent movers differs from that of the household population as a whole. The most striking difference, as table 3.8 shows, is that more than half of recent movers rent their home from a private (34%) or social (20%) landlord whereas 70% of all households own their home.

Table 3.8: Tenure of all households and recent movers compared

	Recent movers (%)	All households (%)
Owner occupier	45	70
Social renting	20	17
Renting privately	34	13
Living rent free	1	1
Total	100	100
Base	409	1264

Source: Northern Ireland Omnibus Survey, September 2008

Note: The findings from the May survey are very similar

Reasons for moving

The September Omnibus survey results provide insights into the factors that motivated households to move in the recent past. Table 3.9 indicates that the highest percentage of people moved for housing and personal reasons. More specifically:

- A third moved in order to secure a bigger or smaller house.
- A quarter wanted to pursue their personal aspirations to purchase a home or move up the property ladder. Most of these recent movers are now homeowners.
- A fifth moved in response to a change in personal circumstances, such as relationship formation or dissolution or other changes in their family circumstances.
- Just 11% moved in order to take up new employment or to live nearer to work. Most of these recent movers were renting privately.

Additional analysis confirms that particular factors influence the migration decisions of specific household groups. Thus:

- Older households placed most emphasis on proximity to family and friends, a desire to move to a smaller home and to secure a home more suitable for those with some form of disability.
- Families and lone parents placed most emphasis on the need for a larger property.

Interestingly, those that moved from one TTWA to another also placed greater emphasis on housing and personal factors than employment factors. Amongst this sub-group, 25% sought more spacious accommodation and 20% sought to purchase a home. By contrast, only 10% sought to move for job related reasons.

Table 3.9: Tenure of all households and recent movers, by tenure

	All recent movers	Renters	Owners
Housing related			
Wanted /needed larger property	26	18	35
Wanted/needed smaller property	8	8	7
No suitable properties in previous area	5	5	5
Wanted to purchase own home	16	2	33
Wanted to move up the property ladder	9	1	19
Wanted to reduce housing costs	4	5	3
Personal related			
To be nearer family, relatives and friends	15	15	15
Set up home with a partner	10	9	12
Relationship breakdown or bereavement	8	11	4
Addition to the family	3	4	2
Area or neighbourhood related			
To be nearer schools/services	3	3	4
Disliked previous neighbourhood/area	5	7	3
Wanted a different neighbourhood/area	8	7	10
Poor transport links	1	1	1
Employment related			
To be nearer work	11	13	8
Change in employment/place of study	5	7	2
Base	409	227	182

Source: Northern Ireland Omnibus Survey, September 2008

Note: respondents could provide up to 3 answers so percentages do not add up to 100%

Search Patterns

The September Omnibus survey also asked recent movers if they had considered a move to another LGD within Northern Ireland prior to moving to their present home. Overall:

- 6 out of 10 recent movers had not considered any other area within Northern Ireland, although one or two had considered moving abroad.
- Most of the other 164 recent movers had considered one or more areas within the Belfast TTWA, reflecting the fact that 55% lived in this TTWA.

Movers that had considered one or more areas within the Belfast TTWA were then asked to explain why they had chosen their current home and locality in preference to other areas considered. Although their answers tended to replicate the reasons for wanting to move house detailed in table 3.9, they convey a clear impression that:

- Kinship ties have a strong influence on the specific locality households move to. Upwards of 75% stated this was one of the main reasons why they had chosen their current home.
- The cost, design, layout and age of properties also exert a strong influence. Again almost all respondents mentioned these factors.
- Employment related factors may have a modest influence on the decision to move house but they exert greater influence on the locality households move to. Over half stated that that it was important to live somewhere convenient for work.

Future intentions

The September 2008 Omnibus survey also provided some additional information on the future movement intentions of recent movers and other households that participated in the survey.

Table 3.10 shows that 22% of recent movers expected to move house in the next 3 years compared to just 11% of all household respondents. This latter figure seems usually low in comparison to both Census and CHI internal migration rates. However it has to be remembered that the future movement intentions of households are not a wholly reliable predictor of future actions because people's circumstances and aspirations can change.

Nonetheless the fact that relatively high proportions of recent movers expect to move within the next 3 years does serve to reinforce the fact that some people move more frequently than others.

As table 3.10 shows, private renters constitute a large proportion of recent movers expecting to move within the next 3 years. The available data suggests that most recent movers living in the private rented sector are younger single person households.

Although the small number of cases makes it difficult to draw firm conclusions, this finding is consistent with other evidence that the propensity to move is shaped significantly by age and life cycle stage.

Table 3.10: Do you intend to move home over the next 3 years?

			Recent movers		
	All households	All movers	Social renters	Private renters	Owners
Yes	11	22	13	37	15
No	88	75	85	58	84
Don't Know	1	3	2	5	1
All	100	100	100	100	100
Base	1264	409	80	141	182

Source: Northern Ireland Omnibus Survey, September 2008

The most frequently offered reasons why households plan to move house within the next 3 years are to:

- Secure larger property.
- Buy a home.
- Move into a new build home.
- Be nearer family, relatives and friends.

Again this highlights that job related moves are not a strong motivator of internal migration in the Northern Ireland context.

Other findings from the Northern Ireland Omnibus Survey

A set of questions was included in the September 2008 survey with the specific intention of comparing very recent migration and commuting flows. Whilst an insufficient number of responses meant we were unable to produce robust results, the patterns generated by the data received appear to be consistent with the analysis presented in sections 4 to 8 of this report.

Conclusions

The data considered in this section shows that:

- The volume of residential movement clearly varies over the economic cycle.
- Urban areas experience higher rates of residential movement than rural areas.
- There are significant variations in the numbers of internal migrants across the 11 identified TTWAs for Northern Ireland.
- Over half of all migrants continue to move within or to the Belfast TTWA.
- The majority of wholly moving households that move from one LGD to another are owner-occupiers.

Republic of Ireland Census data provide some evidence on the ways in which housing markets operate across the border between Northern Ireland and the Republic of Ireland, but not enough to confirm the exact nature of the linkages that exist.

Recent data from the Northern Ireland Omnibus survey data also provide some useful insights into household movement patterns and the motivations behind movement decisions, and were used to inform conclusions drawn on HMA boundaries.

However, as explained in section 2, the core statistical analysis undertaken for identifying specific HMA involved more detailed analysis of 2001 Census and CHI data for the period 2004-2007. This work is the focus of the next 5 sections.

craigavon & newry

Introduction

This section explores the spatial delineation of the major housing markets operating in the TTWAs of Craigavon and Newry. As discussed below, we have concluded that the area involves 3 distinctive but overlapping housing market areas - Greater Belfast HMA, Craigavon HMA and Newry HMA.

Summary description of the geography

The Craigavon and Newry area covers over 2,400 square kilometres and stretches from the south shores of Lough Neagh down to the Mourne Mountains and the border with the Republic of Ireland. As figure 4.1 shows, in 2001 virtually the entire area comprised of two TTWAs - the Craigavon TTWA and the Newry TTWA. Both these TTWAs are adjacent to the Belfast TTWA.

Craigavon TTWA

The Craigavon TTWA extends across the local government districts (LGD) of Craigavon and Armagh. It also includes a couple of wards in Banbridge LGD and Lisburn LGD. At the time of the 2001 Census, some 72% of households were owner-occupiers, 19% were social renters and 9% were private renters¹⁷.

Based on the latest NISRA small area population statistics we estimate that in 2003 Craigavon was home to about 144,000 people and was the second most populous TTWA in Northern Ireland with 8.5% of total population. NISRA local authority level statistics suggest that from 2001 to 2007 population growth (8%) in this TTWA exceeded the rate for Northern Ireland as a whole (4%).

This area is centred on the major employment centre of Craigavon Urban Area (CUA), which incorporates Portadown and Lurgan, and is situated 27 miles southwest of Belfast along the M1. It is also on the Belfast-Dublin rail route. CUA is the third largest urban centre in Northern Ireland. In 2001 7 out of 10 people working in the CUA lived in either Craigavon LGD or Armagh LGD.

The TTWA also includes Armagh City. Census data indicates that of the 8,750 people who worked in Armagh City in 2001, 37% lived in the town and 72% lived in the local district, indicating the town's significance as a local employment centre for the surrounding rural area. On the other hand around 17% of workers living in Armagh LGD commuted to Craigavon LGD to work.

¹⁵ 17 PRS includes 'rent other'

Newry TTWA

Newry lies to the south of the Craigavon area and is the fourth most populous TTWA in Northern Ireland. In 2003 this area had a population of around 124,500, which was equivalent to over 7% of the total population of Northern Ireland. The Newry TTWA covers the whole of Newry and Mourne LGD, most of the Banbridge LGD, including Banbridge town¹⁸ and the Tollymore ward of Down District Council. The main employment centre is Newry Town, which is located close to the border with the Republic of Ireland. This TTWA has experienced faster population growth (10%) than Northern Ireland (4%) as a whole. The local economy has also performed strongly in recent years. The number of jobs in the TTWA increased by over 5,600 between 2001 and 2005, with these located mainly in and around Newry town.

Census 2001 data suggests that in terms of commuting patterns, Newry LGD was very self-contained. Around 85% of people who worked in the area also lived in the area and out-commuting to other employment centres was limited. In terms of in-commuters, the main origin was Banbridge (4%).

Census 2001 migration analysis

Residential movement patterns between TTWAs

In order to test whether TTWAs provided a reasonable approximation of housing markets in 2001 we examined Census migration patterns. More specifically, we examined self-containment rates and flows to and from TTWAs. We also examined the proportion of migrants that moved to and from (a) local government areas and (b) the main employment centre.

Self-containment analysis

Tables 4.1 and 4.2 summarise patterns of residential migration for Craigavon TTWA and Newry TTWA respectively. These tables show the proportion of (a) people, (b) moving groups and (c) wholly moving households that moved home in the year preceding the Census 2001 and that had previously lived in Northern Ireland¹⁹. In both tables the row highlighted in blue shows the proportion of movements occurring within each area. These percentages indicate the degree of housing 'churn' within each TTWA and therefore the degree to which in housing market terms they were self-contained.

¹⁸ Banbridge LGD comprises of 16 wards of which 11 are in the Newry TTWA. A further 3 wards (Dromore North, Dromore South and Gransha) form the outer southern western periphery of the Belfast TTWA whilst 2 wards lie just inside the Craigavon (Gifford and Lawrencetown) TTWA.

¹⁹ We excluded migrants from the rest of the UK to permit like for like comparisons with the CHI analysis.

Table 4.1: Origin of individuals and moving groups that moved to Craigavon TTWA in pre Census year (%)

Origin TTWA	All people	All males	All females	Age 16-24	Age 25-44	All moving groups	Wholly moving household	All moving group owners	Wholly moving owner occupier households
Ballymena	0.3	0.4	0.2	0.4	0.2	0.3	0.3	0.3	0.4
Belfast	10.3	11.2	9.4	14.0	12.0	12.6	9.5	17.7	15.0
Coleraine	0.6	0.5	0.6	1.8	0.6	0.7	0.4	0.7	0.2
Craigavon	82.6	82.1	83.1	76.3	80.7	79.8	84.8	73.4	77.5
Derry	0.4	0.4	0.5	0.8	0.4	0.3	0.2	0.4	0.2
Dungannon	1.7	1.3	2.2	2.4	1.1	1.6	1.1	2.0	1.5
Enniskillen	0.6	0.7	0.5	0.2	0.8	0.3	0.2	0.3	0.4
Mid-Ulster	0.3	0.2	0.3	0.4	0.4	0.4	0.3	0.7	0.4
Newry	2.9	3.1	2.8	3.6	3.4	3.5	3.0	4.1	4.2
Omagh	0.2	0.2	0.3	0.2	0.3	0.2	0.1	0.2	0.0
Strabane	0.1	0.1	0.1	0.0	0.1	0.2	0.2	0.2	0.2
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	10,475	5,039	5,436	1,504	4,154	5,365	3,047	3,085	1,447

The 2001 Census indicates that in terms of patterns of residential migration:

- Both Newry and Craigavon were very self-contained; both areas had levels of housing churn of over 80% on most measures of self-containment.
- Rates of churn amongst those aged 16-24 years in both TTWAs were higher than expected, but this probably reflects the fact that this age cohort included former students that had recently returned to their parental home.
- Although 'all moving groups' households were more likely to have moved from another TTWA than 'wholly moving owner' households, we would caution that a proportion of the 'all moving group owners' probably involved people moving back to parental homes.

Further analysis also confirms that 'wholly moving owner' households were more likely to have moved from another TTWA than 'wholly moving renter' households. Over 20% of owner households living in Craigavon had previously lived outwith the TTWA compared to less than 10% of households that rented from a social or private landlord. A similar pattern was evident in the Newry area.

Table 4.2: Origin of individuals and moving groups that moved to Newry TTWA in pre Census year (%)

Origin TTWA	All people	All males	All females	Age 16-24	Age 25-44	All moving groups	Wholly moving household	All moving group owners	Wholly moving owners occupier households
Ballymena	0.1	0.1	0.1	0.0	0.0	0.3	0.4	0.1	0.0
Belfast	10.5	10.8	10.3	12.2	11.7	12.9	10.9	17.6	14.6
Coleraine	0.7	0.5	0.8	1.1	0.6	0.9	0.8	0.9	0.3
Craigavon	4.8	5.6	4.2	4.2	4.9	4.1	3.2	5.0	3.0
Derry	0.6	0.8	0.5	1.4	0.6	0.9	0.8	0.6	0.9
Dungannon	0.2	0.4	0.1	0.0	0.3	0.5	0.3	0.6	0.6
Enniskillen	0.1	0.1	0.2	0.0	0.1	0.2	0.3	0.4	0.6
Mid-Ulster	0.3	0.4	0.2	0.0	0.3	0.1	0.1	0.1	0.3
Newry	82.5	81.3	83.6	80.8	81.2	79.8	82.8	74.3	79.2
Omagh	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.1	0.0
Strabane	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.3
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	7,393	3,418	3,975	1,066	2,950	3,798	2,147	2,020	952

Flows to and from TTWAs

In terms of the relative magnitude of flows into each TTWA from elsewhere, we examined the proportions of (a) migrants aged 25-44 and (b) wholly moving owners that came from other TTWA, using a benchmark of 10%. Above this figure, flows into a TTWA were judged as significant.

Census data shows that in 2001 there was little movement between the Craigavon TTWA and the Newry TTWA. As table 4.1 shows, just 4% of 'wholly moving' owner households that moved either within or to Craigavon came from Newry. It also shows that only 3% of those aged 25-44 years came from Newry. Likewise table 4.2 confirms that similarly small proportions of the Newry migrant population came from Craigavon.

In both instances, the Belfast TTWA was the only area that exerted any significant influence on the Craigavon or Newry travel to work areas. However, given the scale of the Belfast TTWA relative to adjacent TTWAs, it is not surprising that origin-based flows suggest it exerts influence on them.

We therefore examined whether destination-based flows also demonstrated a link between the Craigavon and Newry TTWA and the Belfast TTWA. In other words, we examined the movement patterns of migrants that originated from Craigavon or Newry and moved within Northern Ireland. To minimise any possible distorting effect of students, we again focused on the movement of those aged 25-44 and 'wholly moving owners.'

Table 4.3: Destination of migrants that moved from Craigavon and Newry

Destination	Origin: Craigavon		Origin: Newry	
	25-44	Owners	25-44	Owners
Ballymena	0.3	0.3	0.2	0.0
Belfast	9.1	7.5	10.8	12.4
Coleraine	0.7	0.9	0.1	0.6
Craigavon	82.9	84.5	4.9	6.4
Derry	0.6	0.7	0.3	0.3
Dungannon	1.5	2.0	0.2	0.3
Enniskillen	0.2	0.9	0.3	0.6
Mid-Ulster	0.3	0.5	0.4	0.3
Newry	3.6	2.2	82.6	78.7
Omagh	0.4	0.2	0.1	0.0
Strabane	0.3	0.2	0.1	0.3
Total %	100	100.0	100.0	100.0
Number	4,045	955	2,900	958

As table 4.3 shows, 8 out of 10 migrants that originated from Craigavon moved within the TTWA and less than 10% moved to the Belfast TTWA. In the case of Newry, around 8 out of 10 migrants also originated from the TTWA but over 10% moved to the Belfast TTWA. This suggests that the Newry and Belfast housing markets overlap.

Movement patterns at LGD and employment centre level

In terms of migration flows at the local government and employment centre levels²⁰, Census migration data suggested that in 2001:

- Significant housing market links exist between Armagh and Craigavon LGD. Around 10% of those who moved within or to Armagh LGD came from Craigavon LGD. Of the 315 people who moved from Armagh to Craigavon LGD, 90% moved to the CUA employment centre. Some 10% of migrants aged 25+ that originated from Armagh also moved to Craigavon LGD.
- Housing market links between Newry and Mourne LGD and Down LGD were limited. There were few flows between these two LGDs. For instance, just 3% of all migrants that originated from Newry and Mourne moved to Down. For migrants aged 25+ the figure was 4%.
- More significantly, links between Newry and Mourne LGD and Banbridge LGD were also limited. Only 6% of those who moved to or within Banbridge came from Newry and Mourne. Likewise less than 4% of those who moved within or to Newry and Mourne came from Banbridge.

²⁰ As discussed in appendix 2, low turnover rates meant that many LGD and employment centre flows for selected sub-groups were based on fewer than 100 people or 40 households. In most instances we therefore based our interpretation on migration flows for the total population and for those aged 25+ years for these two spatial levels to minimise the possible distorting effect of the anonymising small cell adjustment process.

On closer inspection, we found Banbridge LGD had an open housing market that was subject to considerable influence from neighbouring LGDs and employment centres. In particular:

- Just 63% of those who moved to or within Banbridge came from the local authority area. For those aged 25+ the level of self-containment was 58% and for owner-occupiers the level of self-containment was 55%.
- Around 11% of migrants came from Lisburn and 5% came from Craigavon. Amongst those aged 25+ and 'wholly moving owners' the proportions of migrants that came from Lisburn increased to 13% and 17% respectively.
- In terms of flows from nearby employment centres, 10% came from the Belfast metropolitan area, 3% came from the CUA area and just 2% came from the Newry employment centre.
- Migration flows between the Belfast TTWA and Newry TTWA were concentrated in Banbridge. For example, of 480 people that came to the Newry TTWA from the Belfast metropolitan area, 67% moved to Banbridge.

Initial conclusions of HMA boundaries in 2001

On the basis of the Census evidence it appears that there were two distinct housing markets covering this area in 2001, although both were subject to varying degrees of influence from Belfast.

The Craigavon housing market appeared to be very closely aligned with the Craigavon TTWA, encompassing Armagh LGD and Craigavon LGD. Census evidence also pointed to some influence and overlap with the Belfast housing market TTWA in the Craigavon LGD area.

By contrast, the Newry housing market appeared to be more tightly drawn than the Newry TTWA. In particular migration patterns suggested that the Belfast housing market extended deeper into the Banbridge LGD than the TTWA boundary suggested.

Owing to the distorting effect of the Census small cell adjustment process however, it was not possible to establish with any certainty which wards within Banbridge and Craigavon were most closely linked to the Belfast housing market.

Recent residential movement patterns; evidence from the CHI

Early discussions in the course of conducting this project indicated a perception that rising house prices alongside strong growth of the Belfast economy in the period to 2007²¹ had increased the numbers of people migrating from Belfast to areas within reasonable commuting distance, which in turn has modified housing market areas since 2001.

²¹ Belfast City Council (2007) report that Belfast was 1 of the 5 fastest growing economies in the UK.

Table 4.4: Origin of individuals that moved to Craigavon and Newry TTWAs, 2004-2007

Origin TTWA	Craigavon TTWA		Newry TTWA	
	All migrants	Migrants aged 25-44 years	All migrants	Migrants aged 25-44 years
Ballymena	0.2	0.2	0.2	0.3
Belfast	8.1	9.4	10.0	9.9
Coleraine	0.5	0.3	0.4	0.3
Craigavon	85.5	83.8	4.2	4.6
Derry	0.4	0.3	0.4	0.3
Dungannon	1.6	1.7	0.2	0.3
Enniskillen	0.3	0.3	0.2	0.2
Mid-Ulster	0.3	0.4	0.2	0.2
Newry	2.9	3.3	83.9	83.6
Omagh	0.2	0.1	0.2	0.3
Strabane	0.1	0.1	0.0	0.1
Total %	100.0	100.0	100.0	100.0
Number	52,434	19,726	36,902	14,022

We therefore examined residential migration patterns derived from the CHI for the period September 2004 to December 2007. As table 4.4 shows, CHI data suggests that both TTWAs remain very self-contained. More unexpectedly, it also indicates that at the TTWA level there had been little change since 2001 in the proportions of migrants that came from the Belfast TTWA to either the Craigavon TTWA or Newry TTWA.

One reason for the lack of apparent change at TTWA level is that aggregate analysis can disguise changing migration patterns at a more localised level.

We therefore looked at ward level migration flows to explore migration patterns further. More specifically, we examined whether wards experienced significant levels of in-migration from beyond the LGD boundary in which a ward was located. For both Newry and the Craigavon housing markets flows from the Belfast TTWA were particularly important.

As discussed in annex 2, we used a combination of thresholds relating to the proportions of in-migrants to assign individual wards (or clusters of wards) to a specific HMA. In the case of these four local government district areas the most important thresholds were whether:

- Moves from elsewhere within the Belfast TTWA had a major influence (20%) or a significant (10%) influence on a ward or cluster of wards²²
- Moves from elsewhere within the Craigavon TTWA or the Newry TTWA had a major influence (10%) or a significant (5%) influence on a ward or cluster of wards
- Adjoining LGD or TTWA exerted a major or significant influence on a ward or cluster of wards.

²² We selected a higher threshold of 20% for the Belfast TTWA to take account of greater size of the population in this TTWA.

The following paragraphs summarise the main findings with respect to the 4 local government districts in the Craigavon and Newry TTWA. We begin by looking at the Banbridge LGD area. As already seen, Banbridge had a reasonably open housing market in 2001 and consequently is more likely to have experienced changes in migration patterns²³.

Banbridge LGD Area

CHI data confirms that the housing market in Banbridge LGD remains relatively open. Between September 2004 and December 2007 a third of all migrants came from outwith the local authority area, with 18% coming from other local government district areas within the Belfast TTWA.

Whereas at the time of the 2001 Census just 3 Banbridge wards were included in the Belfast TTWA, CHI evidence suggests that now 12 out of the 17 Banbridge wards have a strong connection to the Belfast housing market:

- In excess of 25% of those moving within or to 5 wards come from other local authority areas in the Belfast TTWA. These wards²⁴ all lie adjacent to Lisburn LGD, which forms part of the Belfast HMA.
- Banbridge town²⁵ is subject to significant flows from the Belfast TTWA but flows from the Craigavon LGD are also significant.

As discussed below, the eastern edge of Craigavon appears to have been encompassed by the Belfast housing market.

On further investigation of ward level migration flows between Banbridge and Craigavon LGDs we found that flows between Banbridge town and Craigavon LGD are concentrated in the eastern edge of Craigavon where the Craigavon and Belfast housing markets overlap. This suggests that Banbridge town also now falls within the Belfast HMA.

In terms of the remaining 5 wards, the 4 adjacent to the Newry LGD boundary²⁶ continue to be closely linked to the Newry housing market.

In the case of Gilford, CHI analysis suggests this ward continues to form part of the Craigavon HMA as well as the Craigavon TTWA.

Newry LGD Area

CHI data supports our initial impression that the reach of the Newry housing area is less extensive than the TTWA. In particular:

- Newry LGD is very self-contained and has no significant links with any other LGD or TTWA at the aggregate level. Over 87% of all migrants come from within Newry LGD and only 6% come from the Belfast TTWA. The movement patterns for migrants aged 25-44 are almost identical.
- In 28 out of the 30 Newry LGD wards, upwards of 85% of all migrants come from within Newry LGD, rising to over 90% in 13 wards.

²³ This area includes the 6 Banbridge town wards plus Lawrencetown

²⁶ These 4 wards are Bannside, Katesbridge, Loughbrickland and Rathfriland

Wards adjoining neighbouring authorities tend to have some links with these LGDs. However, these cross-border flows are typically based on moves to and from wards in close proximity to each other²⁷ and involve small numbers of people. This reflects the low turnover rates found in rural areas. In the absence of clear evidence to the contrary, we therefore assigned these 'overlap wards' on the basis of their designated TTWA.

Overall, it appears that the Newry housing market:

- Encompasses Newry LGD, the southern tip of Down LGD and south Banbridge LGD.
- No longer exerts a significant influence on the more densely inhabited northern part of Banbridge LGD, which has become very connected to the Belfast housing market in recent years.

Craigavon LGD Area

Consistent with housing development in parts of Craigavon LGD and the redevelopment of the Rushmere Shopping Centre there has been an increase in the numbers and proportions of people migrating from Lisburn and other local government districts in the Belfast TTWA. Much of this inward flow is centred on the four eastern wards that adjoin Lisburn LGD:

- Almost half of all migrants that came from the Belfast TTWA moved to Magheralin, Donaghcloney, Aghagallon and Waringstown. Likewise, 49% of all migrants aged 25-44 that originated from the Belfast TTWA moved to one of these 4 wards.
- The strong link between these wards and the Belfast housing market is also evidenced by the fact that 25% of all those that moved within or to this local area came from the Belfast TTWA.

By contrast, there are no significant inward flows from the Belfast TTWA to any of the wards that make up the CUA employment centre²⁸.

Armagh LGD area

CHI analysis confirms that there is a significant link between the housing market operating across Craigavon LGD and Armagh LGD.

Between September 2004 and December 2007, some 1,610 migrants moved from Craigavon LGD to Armagh, of which 80% came from the CUA employment centre. This figure is greater than the combined number of migrants that came from the neighbouring districts of Newry and Mourne, Dungannon, and Banbridge. Consequently, Craigavon LGD was the only adjacent LGD to Armagh LGD from which more than 10% of migrants originated.

In 9 out of 22 wards in Armagh LGD, more than 10% of migrants came from Craigavon LGD. In 4 of these wards over 25% of migrants came from Craigavon LGD. Migration patterns amongst those aged 25-44 revealed a similar picture, although proportions tended to be slightly higher.

²⁷ For example the Annalong ward in Newry was subject to significant inflow from Down LGD whilst the Tollymore ward in Down is subject to significant inflow (10%) from Newry and Mourne LGD.

²⁸ For example over 90% of people who moved to Court (in Lurgan), Drumgask, Drumgor (both in Craigavon) and Corcrain (Portadown) came from Craigavon LGD.

In terms of out-migrants, 1,313 people moved from Armagh LGD to Craigavon LGD. Again this was more than the combined numbers of those who moved to the neighbouring LGDs. Of those who moved to Craigavon LGD, 990 or 75% moved to the CUA employment centre. By contrast, less than 230 of those that moved to the neighbouring employment centres of Newry town or Dungannon town came from Armagh LGD.

However, there is insufficient evidence to confirm whether parts of south Armagh LGD fall within the area of influence of the CUA employment centre and/or the more local employment centre of Armagh City. In large part this reflects the low levels of turnover and the concentration of local moves in Keady²⁹ and other wards in this area.

Based on our analysis of CHI we conclude the Craigavon HMA:

- Includes all of Craigavon LGD except the eastern area adjoining the Lisburn LGD, which now appears to be very much connected to the Belfast housing market.
- Incorporates Armagh LGD, although some more remote and less densely populated areas have few links with this or any other major housing market
- Encompasses the Gilford area of Banbridge LGD, but in contrast to the TTWA does not extend into Lisburn LGD.

Summary

The map below summarises the proposed housing market areas and how they compare with the 2001 TTWAs. The grey line shows the proposed HMA whilst the coloured areas show the TTWAs.

The expansion of the Belfast housing market into Craigavon LGD and Banbridge LGD is consistent with the fact that population and household growth in both areas have been amongst the strongest in Northern Ireland in recent years.

Finally, it is also worth noting that Experian's (2008) settlement study on behalf of the Department for Regional Development suggests that 35% of the population of Banbridge LGD comprises of 'Better Off Families' or 'Young Nest Makers'. Both these lifestyle groups tend to be more heavily concentrated in commuting areas.

²⁹ For example, 634 moves were recorded for the small town of Keady, of which 230 were amongst those aged 25-44 years. Of these 634 moves, 51% involved individuals moving within the town and only 8% involved individuals moving from Armagh City. Most other inflows involved fewer than 20 individuals.

Figure 4.1: Craigavon and Newry TTWAs

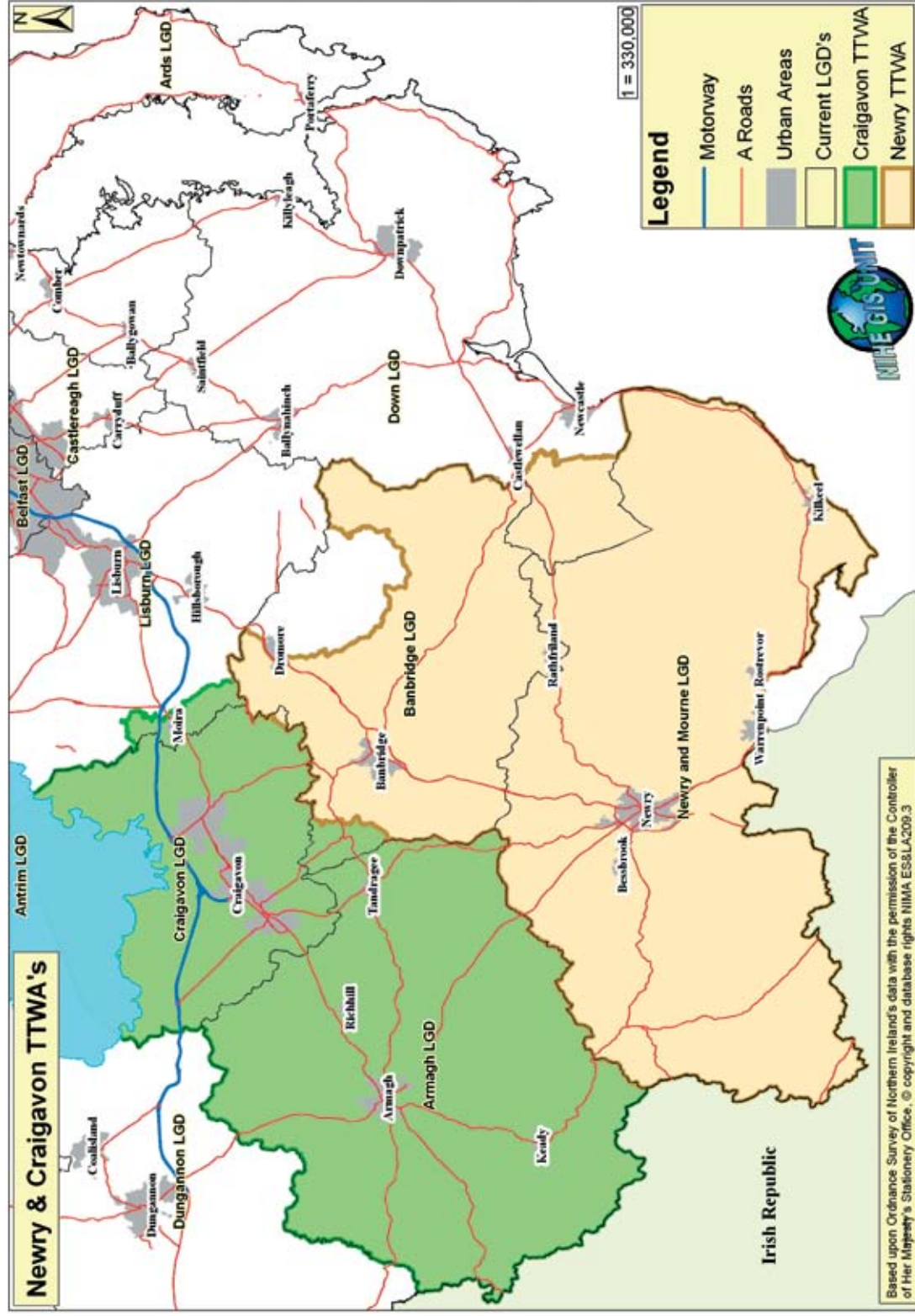
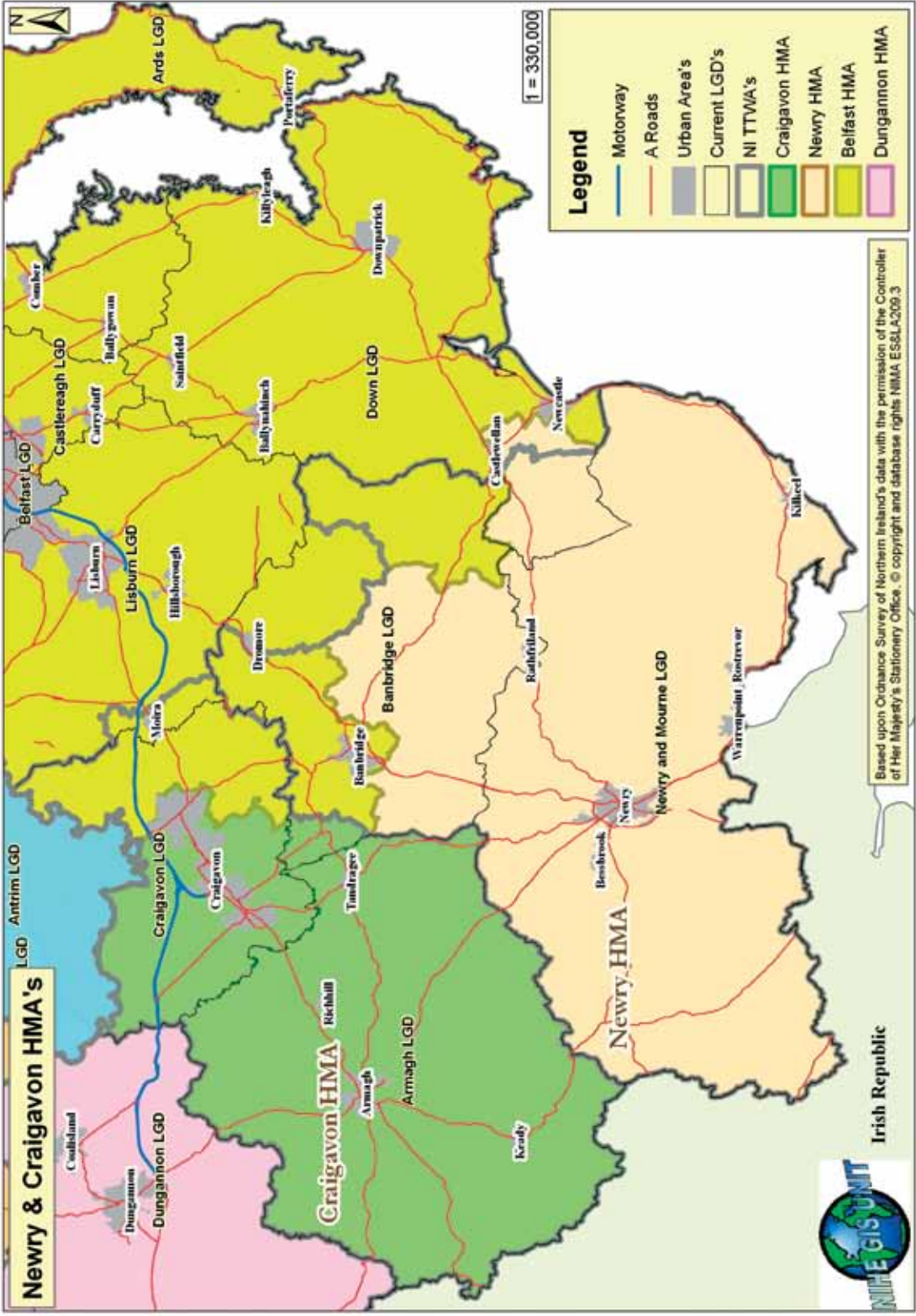


Figure 4.2: Craigavon HMA and Newry HMA



belfast metropolitan area & beyond

Introduction

This section discusses the spatial delineation of the Belfast housing market, which in 2001 included the metropolitan area and seemed to align with the Belfast TTWA. More recent CHI evidence suggests that the housing market has extended its influence northwards and southwards into adjacent TTWAs.

Summary description of the geography

As figure 5.1 shows, Belfast TTWA (shown in blue) covers an area approximately 2,690 square kilometres that stretches from Larne and Antrim in the North to Downpatrick and Newcastle in the south and from the Ards Peninsula westwards beyond Lisburn. In 2003 this area had an estimated population of around 855,000, which represented 50% of the total population of Northern Ireland. In 2001 around 68% of households were owner-occupiers, 23% were social renters and 9% were private renters.

Belfast Metropolitan Urban Area and Belfast Metropolitan Area Plan

The TTWA is based on the employment centre known as the Belfast Metropolitan Urban Area (BMUA). NISRA (2005) report that this area stretches around Belfast Lough to include the urban areas of Newtonabbey, Greenisland and Carrickfergus to the north and Holywood and Bangor to the south. In addition, the BMUA includes the Carryduff, Castlereagh and Lisburn urban areas.

The employment centre is strongly connected to surrounding settlements and its continued economic growth is central to the well being of the Northern Ireland economy. The Belfast Metropolitan Plan therefore provides a strategic framework to drive forward and co-ordinate land use, housing, transport and other social, economic and environmental matters to maximise the potential of the employment centre and its immediate hinterland.

As table 5.1 indicates, the Belfast Metropolitan Plan Area (BMPA) is more extensive than the employment centre but less extensive than the Belfast TTWA. NISRA population estimates suggest that the total population of the six LGD in the BMPA dipped after 2001 before returning to its starting level of 647,000 in 2007. Over the same period the estimated number of households has increased from 249,000 to 260,000.

Table 5.1: Summary of Local Authorities that fall wholly or partly within the Belfast TTWA

Local Authorities Within BMPA and the Belfast TTWA	Local Authorities Outwith BMPA but wholly or partly within the Belfast TTWA
Belfast	Antrim (except Cranfield, Drumanaway and North Randalstown, which lie within the Ballymena TTWA, and Toome, which falls within the Mid- Ulster TTWA)
Lisburn (except Old Warren, which falls within the Craigavon TTWA)	Larne (except Carnlough, which falls within the Ballymena TTWA)
Carrickfergus	Ards
Castlereagh	Down (except Tollymore, which falls within the Newry TTWA)
Newtownabbey	Banbridge (including the 3 wards of
Gransha, Dromore North and Dromore South)	North Down

Census 2001 migration analysis

We examined Census migration patterns to assess whether, in 2001, the local authorities within the BMPA formed a single housing market or whether the housing market area extended across the rest of the Belfast TTWA.

The BMPA local authority areas: levels of self containment

Table 5.2 summarises the proportion of migrants that moved within each LGD in the BMPA in the pre-Census year³⁰. It reports the degree of origin based self-containment in terms of the total migrant population broken down by age group plus wholly moving households broken down by tenure and shows that:

- Castlereagh LGD had a very open housing market; fewer than 50% of migrants came from within the LGD other than social renters.
- Carrickfergus, Lisburn and Newtonabbey LGDs had reasonably open housing markets. With the exception of social renters, self-containment rates were below the 67% threshold used to define the 2001 urban TTWAs.
- North Down LGD was somewhat self-contained, although additional analysis showed that 13% of wholly moving owners came from Belfast LGD.
- Belfast LGD was also somewhat self-contained, although the rate for the 16-24 age cohort was considerably lower (56%) than for the total migrant population or other migrant sub-groups. This pattern reflects the UK wide trend for young adults to move to cities to study or secure work.

³⁰ The percentages are based on the total migrants that originated from within Northern Ireland and exclude migrants from the rest of the UK to permit like for like comparisons with the CHI analysis.

Table 5.2: Local migrants as a proportion of all migrants that moved within or to LGDs in the Belfast Metropolitan Area in pre Census year (%)

Migration Indicator	Belfast	Carrickfergus	Castlereagh	Lisburn	Newtownabbey	North Down
Migrant population						
People all ages	68.9	65.0	42.3	65.4	58.2	72.0
16-24 years	56.2	66.8	39.6	64.6	45.0	72.7
25+ years	74.9	61.4	39.1	65.0	60.0	69.9
Wholly moving household						
Owner	68.7	54.7	42.4	63.8	60.5	67.0
Social renter	92.2	82.2	62.1	81.1	79.5	79.8
Private renter	77.3	67.5	39.3	56.6	57.3	74.9
No migrant population	27,616	3,265	4,093	7,348	6,669	5,692
No wholly moving group	7,133	1,104	1,284	2,217	1,968	1,797

Source: 2001 Census: Special Migration Statistics (United Kingdom)

As noted in section 3, significant numbers of migrants from Belfast LGD moved to other parts of Northern Ireland. We therefore examined destination-based self-containment levels for Belfast. This revealed that 72% of migrants from Belfast remained within the LGD. This fell to 66% amongst those aged 25+ years and to 53% amongst owner-occupiers.

Belfast LGD's high level of self-containment in part reflects the high rates of mobility of young adults and the high rates of churn amongst those that rent their home from a private or to a lesser extent social landlord.

- Of the almost 28,000 migrants that moved either within or to Belfast in the year prior to the Census, nearly 11,000 were aged 16-24 years, which was equivalent to 39% of all migrants. Although 15% of the total population in 2001 were aged 16-24 years, this age group comprised:
 - A third (32%) of all migrants that moved within Belfast LGD
 - Over half (55%) of those that moved to Belfast LGD
- Not only were wholly moving households that rented a home more likely to remain within Belfast LGD, they were also twice as likely as owners to have moved home in the year prior to Census. Consequently, as figure 5.2 shows, the tenure profile of wholly moving households that moved within Belfast and that of all households living in Belfast were very different.

Figure 5.2: Comparison of tenure of wholly moving households and all households within Belfast LGD in 2001

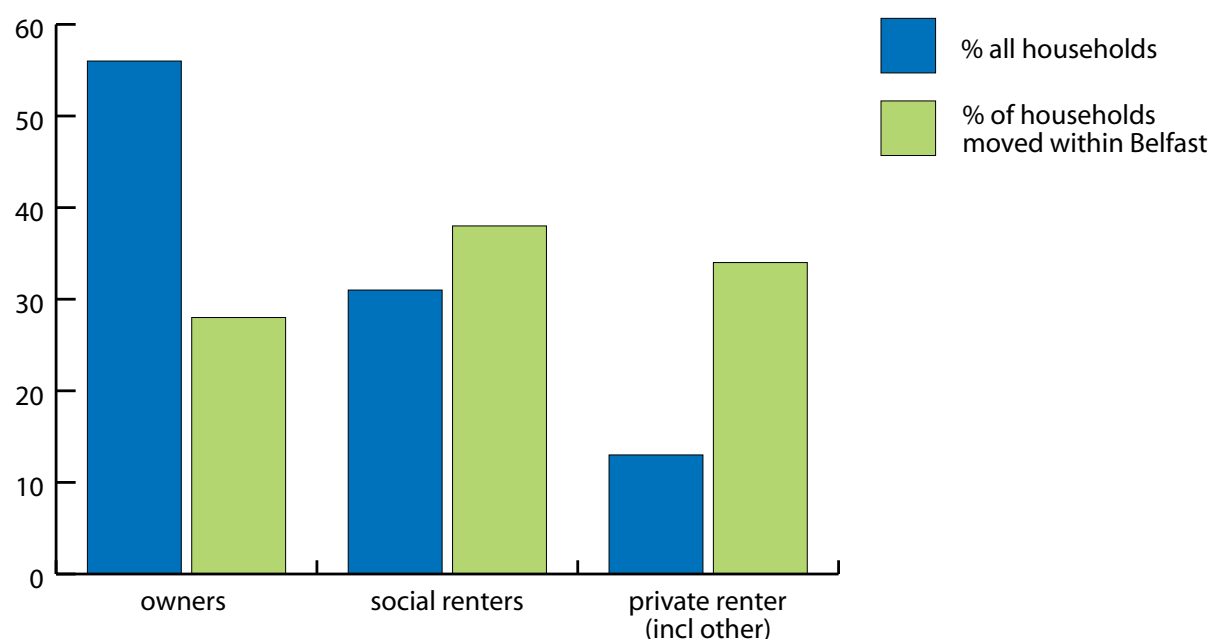


Table 5.3 shows the proportion of migrants that moved within or to each LGD that came specifically from either the Belfast employment centre³¹, the BMPA or the Belfast TTWA. It shows that in the year to Census night 2001:

- Upwards of 7 out of 10 migrants in all 6 LGDs came from within the employment centre area and more than 8 out of 10 migrants came from within the BMPA area.
- With the exception of Lisburn, 9 out of 10 of migrants came from within the TTWA. The main reason why less than 90% of people that moved to or within the Lisburn area came from the Belfast TTWA was because a small proportion of the Lisburn LGD fell within the Craigavon TTWA.
- Neither Lisburn nor any of the other 5 LGD experienced a significant inflow of 10% or more from any other TTWA or any LGD outwith the Belfast TTWA.

³¹ To minimise the possible distorting effect of the small cell adjustment process, we primarily conducted analysis of employment centre based flows on the total population and for those aged 25+ years. However, as the Belfast employment centre has a much higher population than other employment centres it was also possible to look at owner occupation flows. For further details please refer to appendix 2.

Table 5.3: Origin of migrants that came to each LGD in pre Census year (%)

Origin	Belfast	Carrickfergus	Castlereagh	Lisburn	Newtownabbey	North Down
Came from Belfast employment centre (BMUA)						
People all ages	80.1	77.5	82.5	72.9	74.2	84.0
25+ years	87.9	78.7	82.4	71.6	78.6	86.0
Owner	85.2	76.5	83.9	68.8	77.0	83.4
Came from BMPA area						
People all ages	82.1	89.4	86.0	86.6	85.5	87.9
25+ years	89.3	90.1	85.8	87.2	89.9	87.6
Owner	87.1	88.8	88.7	90.3	90.3	85.8
Came from Belfast TTWA						
People all ages	93.7	95.2	93.4	88.8	93.3	96.1
25+ years	93.2	94.9	92.9	89.7	94.2	97.7
Owner	93.2	97.6	92.8	87.3	90.8	96.5
No migrant population	27,616	3,265	4,093	7,348	6,669	5,692
No wholly moving group	7,133	1,104	1,284	2,217	1,968	1,797

Source: 2001 Census: Special Migration Statistics (United Kingdom)

Census migration analysis therefore suggests that in 2001 these 6 local authority areas did form the core of the Belfast HMA.

Census 2001 migration analysis for the rest of the Belfast TTWA

Turning to the 5 other LGD that fall wholly or partly within the Belfast TTWA, (that is Antrim, Larne, Ards, Down and Banbridge) table 5.4 shows the proportion of migrants that moved to each LGD that either came from within that LGD or from another specified area. As Banbridge LGD was discussed in detail in section 4, the following paragraphs deal with the other four LGDs.

Table 5.4: Origin of migrants that moved within or to each LGD in pre Census year (%)

Origin	Antrim	Ards	Down	Larne	Banbridge
Came from LA					
People all ages	64.3	63.0	73.0	75.6	62.7
25+ years	61.2	61.5	67.9	74.6	57.9
Owner	62.1	59.0	61.9	69.7	54.7
Came from Belfast employment centre (BMUA)					
People all ages	20.0	30.7	13.7	12.8	10.3
25+ years	21.0	32.0	14.7	13.8	12.0
Owner	20.9	35.6	22.4	15.0	18.2
Came from BMPA area					
People all ages	24.7	32.4	15.7	18.4	16.8
25+ years	26.9	33.7	17.6	18.7	19.3
Owner	27.6	37.3	25.0	24.5	25.6
Came from Belfast TTWA					
People all ages	74.8	96.2	91.3	90.4	29.5
Owner	73.5	97.9	87.6	91.5	34.6
Came from Ballymena TTWA					
People all ages	14.8	0.3	0.3	7.0	0.4
Owner	15.8	0.3	0.6	6.9	0.0
Came from Newry TTWA					
People all ages	0.0	0.6	6.2	0.2	53.5
Owner	0.5	0.7	8.0	0.8	45.8
No migrant population	3,560	5,900	4,600	2,400	3,100
No wholly moving group	1,041	1,716	1,285	766	928
Population 2001	48,366	73,244	63,828	30,832	41,392
Migrants as % population	7.4%	8.1%	7.2	8.0%	7.5%

Source: 2001 Census: Special Migration Statistics (United Kingdom)

Antrim LGD

Antrim LGD lies adjacent to the BMPA and Lough Neagh and is on the transport corridors linking Derry and Coleraine to Belfast. The housing market in this area is reasonably open and has strong links with the Belfast housing market. In 2001 around 3 out of 5 migrants came from within the local authority area and 1 out of 4 came from the BMPA.

As part of north Antrim LGD is located within the Ballymena TTWA, residential flows between Antrim LGD and Ballymena LGD in the pre-Census year were lower than anticipated.

On further investigation we found that 35% of all migrants that moved within or to Antrim LGD came from the Antrim employment centre and a further 20% came from the BMUA. By contrast, just 2% came from the Ballymena employment centre and less than 5% came from Ballymena LGD. A similar pattern was found for those aged 25+ years and 'wholly moving owners'³².

In terms of destination-based flows, just 8% of all migrants that moved away from Antrim LGD but remained within Northern Ireland relocated to Ballymena LGD, although this proportion increased to 11% for 'wholly moving owners'. Moreover, many of these individuals and households had moved to Ballymena wards that adjoined the Antrim LGD boundary.

Ards LGD

Located to the east of Belfast City, Antrim LGD had a reasonably open housing market in 2001 with strong links to the Belfast housing market. In the pre Census year a third of migrants that moved within or to Ards LGD came from the BMPA area. Reflecting its distinctive geographical location, there were no other significant flows to or from any LGD not in the Belfast metropolitan area.

Down LGD

The housing market in Down was more self-contained and subject to less influence from the BMPA than either Antrim LGD or Ards LGD. Only in the case of 'wholly moving owners' did the proportion of migrants that came from the BMUA or BMPA exceed 20%. The relatively high rate of self-containment appeared to be partly associated with the low turnover rates in the owner occupied sector. Just 2.7% of owners resident in Down LGD at the time of the Census had changed address in the previous 12 months compared to 4.5% of owners living in Carrickfergus LGD, 3.6% of owners living in Ards LGD and 3.5% of those living in North Down LGD.

Further analysis confirmed that there were no major or significant flows between Down LGD and any LGD outwith the Belfast BMPA area. Both origin and destination based flows between Down LGD and the neighbouring authorities of Newry and Mourne LGD and Banbridge LGD were less than 4%.

Larne LGD

The housing market in Larne LGD also appeared to be self-contained. All three key indicators indicated that at least 7 out of 10 migrants came from the local area. Nonetheless, there were significant links with the core of the Belfast HMA. Close to 2 out of 10 migrants came from the BMPA, rising to 25% of owners.

As part of Larne LGD is located within the Ballymena TTWA we investigated flows between Larne LGD, neighbouring LGDs and nearby employment centres. This indicated that Larne LGD had few links to anywhere in the Ballymena TTWA. In particular:

- Over 15% of migrants came from Carrickfergus and Newtownabbey LGD but only 5% came from Antrim and Ballymena LGD and less than 1% came from Moyle LGD.
- Around 12% of migrants that originated from Larne LGD moved to Carrickfergus LGD or Newtownabbey LGD whereas only 3% moved to Antrim LGD or Ballymena LGD and less than 1% moved to Moyle LGD.

³² Thus almost 7 out of 10 of the 525 migrants that came from the Ballymena TTWA in the pre Census year already lived in Antrim LGD.

- In terms of flows from nearby employment centres, 13% of all migrants came from the BMUA, 1% came from Antrim Town and just 0.6% came from Ballymena Town. A similar pattern was found for those aged 25+ years and wholly moving owners.

Initial conclusions on HMA boundaries in 2001

Census evidence suggests that in 2001 the Belfast housing market was closely aligned with the Belfast TTWA. It encompassed the Belfast Metropolitan Plan Area and the most populous areas of the other LGD that wholly or partly fall within the Belfast TTWA. It does appear there was some potential overlap between the Belfast housing market and adjoining housing markets. However, Census data limitations prevented us from assessing whether parts of Antrim LGD, Larne LGD or Down LGD perhaps lay outside the sphere of influence of the Belfast housing market.

Recent residential movement patterns: evidence from the CHI

To update the Belfast housing market area boundary we analysed ward level migration flows derived from the CHI dataset. As discussed in appendix 3, we used a combination of migration thresholds to assign wards to specific HMA. The most important thresholds for the Belfast TTWA were whether:

- Migrants (or migrants aged 25-44 years) that came from the Belfast TTWA other than the LGD in which the ward (or cluster of wards) was located had a major influence (20%) or a significant (10%) influence
- No other adjoining LGD or TTWA exerted a major (10%) or significant (5%) influence on a ward³³.

Belfast Metropolitan Plan Area

Analysis of CHI data confirms that the Belfast housing market encompasses all 6 LGD within the BMPA. In particular:

- At the local authority level, 28% of all migrants that moved within or to Carrickfergus LGD came from elsewhere within the Belfast TTWA. In 15 out of the 17 wards in this area, at least 20% of migrants that moved within or to the ward came from elsewhere within the Belfast TTWA. In the 2 other wards at least 14% of migrants came from the rest of the Belfast TTWA.
- 43% of all migrants that moved within or to Castlereagh LGD came from elsewhere within the Belfast TTWA and all 23 wards were subject to major influence from the rest of Belfast TTWA.
- 26% of all migrants that moved within or to Newtonabbey LGD came from elsewhere within the Belfast TTWA and 19 out of 25 wards were subject to major influence from the rest of the Belfast TTWA. In no ward was the proportion of migrants from the rest of the Belfast TTWA below 10%
- 27% of all migrants that moved within or to Lisburn LGD came from elsewhere within the Belfast TTWA. 17 wards were subject to major influence from the rest of the Belfast TTWA. In only 1 of the 13 other wards did the proportion fall below 10%³⁴.
- 29% of all migrants that moved within or to North Down LGD came from the rest of the Belfast TTWA. Three quarters of the 25 wards in this LGD were subject to major influence from the rest of the Belfast TTWA and in no ward did the proportion of migrants fall below 10%

³³ Lower thresholds were set for adjoining areas because they had a much smaller population than the Belfast TTWA.

³⁴ However this ward is strong connected with the Banbridge and Craigavon area that we have proposed to include in the Belfast HMA

CHI analysis for the rest of the Belfast TTWA

Ards LGD

CHI data confirms that the housing market in Ards LGD remains reasonably open. In the 40 months to December 2007, 27% of migrants came from elsewhere within the Belfast TTWA, rising to 29% of those aged 25-44 years.

In 18 out of the 23 Ards LGD wards, upwards of 20% of all migrants came from the rest of the Belfast TTWA. In 3 wards at least 15% of migrants came from the rest of the Belfast TTWA and in the remaining 2 wards upwards of 10% did so.

Wards close to Castlereagh LGD, Down LGD and North Down LGD had the highest proportions of migrants from elsewhere within the Belfast TTWA. In particular, more than a third of migrants in Donaghadee on the east coast, Ballygowan situated south of Castlereagh and Lisbane and Killinchy on the western edge of Strangford Lough came from the rest of the Belfast TTWA.

As expected, Kircubbin and Portaferry on the eastern shores of Strangford Lough towards the tip of the Ards Peninsula had the lowest rates of migrants from the rest of the Belfast TTWA.

Antrim LGD

In the period from September 2004 to December 2007 some 20% of all migrants that moved within or to Antrim LGD came from elsewhere within the Belfast TTWA, increasing to 23% for those aged 25-44 years.

CHI data shows that 5 wards have a strong connection to the Belfast housing market:

- In the case of the 4 wards³⁵ that form the southern and eastern border of Antrim LGD, over 40% of all migrants came from elsewhere within the Belfast TTWA. For those aged 25-44 years the percentages were closer to 50%. All 4 wards are adjacent to one of the LGDs in the BMPA.
- Over 30% of migrants in the Aldergrove area, which includes Belfast International Airport, came from elsewhere within the Belfast TTWA.

The local employment centre of Antrim Town is comprised of 9 wards³⁶. Although it is somewhat self-contained, the Belfast housing market has an overarching effect:

- 11% of migrants that moved within or to Antrim Town came from elsewhere within the Belfast TTWA. For those aged 25-44 years this proportion was 14%. By contrast, just 4% of migrants came from the Ballymena TTWA. Moreover, of the 910 migrants that came from elsewhere within the Belfast TTWA, 3 out of 4 previously lived in the Belfast employment centre (BMAU).
- In terms of destination flows, 9% of all migrants that had previously lived in Antrim Town moved to another LGD within the Belfast TTWA whilst 4% moved to elsewhere in the Ballymena TTWA. Migrants aged 25-44 years showed a stronger propensity to move to Belfast TTWA, with 15% having moved to the rest of the Belfast TTWA.

³⁵ These 4 wards were Crumlin, Clady, Templepark and Parkgate

³⁶ These wards are Balloo, Ballycraigy, Farranshane, Fountain Hill, Greystone, Massereene, Steeple, Stiles and Springfarm. Turnover rates in Antrim Town were relatively high but most migrants moved nearby. As a result, over 70% of migrants that moved within or to Antrim Town had previously lived in the town.

- Of the 330 migrants that moved to Ballymena LGD from Antrim Town, 41% moved to the part of Ballymena subject to major influence from the Belfast TTWA. For those aged 25-44 years this figure increased to 44%.

According to the Regional Development Strategy (RDS), Antrim is expected to have a role in accommodating a growing proportion of the Belfast Metropolitan area housing market. The RDS Adjustment published in 2005 suggests that 8,000 housing units will be required in the period from 1998 to 2015. Assuming a sizeable proportion of these new homes are constructed in and around Antrim Town, this would further strengthen links with the Belfast housing market.

The 5 wards of Toome, Drumanaway, Cranfield, Shilovdan and Randalstown are located to the north west of Antrim Town and border Lough Neagh, Magherafelt LGD and Ballymena LGD. Migration flows to and from these 5 wards suggest this is an area where the Belfast, Ballymena (and in the case of Toome) Mid Ulster housing markets overlap. In particular:

- Although 12% of all migrants who moved within or to this area came from elsewhere within the Belfast TTWA, 10% came from elsewhere within the Ballymena TTWA and 6% came from elsewhere within the mid Ulster TTWA.
- In terms of destination flows, 8% moved to another LGD in the Belfast TTWA whereas 11% moved to another LGD in the Ballymena TTWA and 5% moved to another LGD in the mid Ulster TTWA.
- For migrants aged 25-44 years the patterns of migration flows were similar to that for migrants as a whole.

Further investigation revealed that flows to and from Drumanaway, Cranfield, Shilovdan, Randalstown and Ballymena LGD are concentrated in the area to the south and east of Ballymena Town. As discussed in section 6, the Belfast housing market has an overarching effect on this part of Ballymena LGD. This suggests that these 4 wards now fall within the Belfast housing market area.

In the case of Toome, there is a high rate of churn between this ward and neighbouring wards in Magherafelt LGD, including Magherafelt town, which is the main shopping and retail service centre for the surrounding rural area. This suggests Toome falls inside the Mid-Ulster HMA as well as the TTWA.

Larne LGD

At the LGD level, around 19% of all migrants and 21% of migrants aged 25-44 years came from elsewhere within the Belfast TTWA.

The 6 rural wards outwith Larne Town attracts proportionately more migrants from elsewhere than the town of Larne itself³⁷. Between September 2004 and December 2007, some 4,600 migrants moved within or to these 6 wards, of which 27% came from elsewhere within the Belfast TTWA. By comparison, just 12% of migrants that moved within or to Larne Town came from elsewhere within the Belfast TTWA. Furthermore, such moves tended to be concentrated in the Harbour, Central and Carncastle areas.

³⁷ These wards are Ballycarry, Carnlough, Glenarm, Glynn, Island Magee and Kilwaughter. CHI data indicates that collectively 68% of migrants for these 6 wards came from within the LGD compared to 77% for Larne LGD.

The comparatively low rate of inward flows to Larne Town reflects the fact that the town has a high rate of churn. Over 3 out of 5 migrants that moved within or to Larne Town came from the town and 84% came from within Larne LGD.

Neither Larne Town nor its rural hinterland area has significant flows to or from any LGD other than Carrickfergus, Newtonabbey and to a lesser extent Belfast.

Down LGD

CHI analysis suggests that links between the Belfast housing market and the housing market operating in Down LGD have changed little in recent years. Overall, 17% of all migrants and 19% of migrants aged 25-44 years came from elsewhere within the Belfast TTWA. Links with other parts of Northern Ireland remain minimal. Just 3% of all migrants came from LGD within the Newry TTWA and less than 1% came from anywhere else in Northern Ireland. This was also true for those aged 25-44 years.

The Belfast housing market exerts a major influence on wards adjacent to or within easy commuting distance of the neighbouring local authorities that form part of the BMPA. This area³⁸ stretches from Saintfield and Derryboy to Dunmore. Over 30% of migrants that move within or to this area come from elsewhere within the Belfast TTWA.

The Belfast housing market also exerts significant influence on Downpatrick and wards that lie to the east and west of the town³⁹. Around 13% of migrants that moved within or to this area come from elsewhere within the Belfast TTWA.

Newcastle and the southern end of Down⁴⁰ is an area where the Belfast and Newry housing markets overlap. However as noted in section 4, residential moves in the area are highly localised. In the absence of other evidence we therefore assigned these 'overlap wards' on the basis of their designated TTWA. Aside from Tollymore, which falls inside the Newry housing market, the rest of this area was assigned to the Belfast HMA.

Summary

The map in figure 5.3 summarises our proposed housing market area for Belfast and how it compares to the 2001 TTWA. It shows that the Belfast housing market has expanded to include all of Larne LGD and all but 1 ward of Antrim LGD.

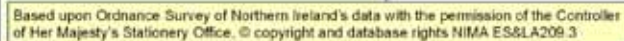
As the map makes clear, the Belfast HMA has extended into a sizeable proportion of the Ballymena TTWA. This raises some doubt as to whether Ballymena remains a distinctive housing market area or whether Ballymena housing market is becoming a localised housing market that operates within the overarching influence of the Belfast housing market. This issue is explored further in section 6.

³⁸ These wards are Ballymaglave, Ballynahinch East, Derryboy, Dunmore, Kilmore, and Saintfield

³⁹ These wards are Ardglass, Audley's Acre, Ballymote, Cathedral, Crossgar, Drumaness, Dundrum, Killough, Killyleagh, Quoile, Seaforde, and Strangford

⁴⁰ These wards are Castlewellan, Donard, Murlough, Shimna, and Tollymore





coleraine & ballymena

Introduction

This section explores the spatial structure of the housing markets operating in the Ballymena and Coleraine TTWA. Based on the material presented below we believe the Coleraine housing market extends beyond the TTWA whereas the Ballymena housing market is more tightly drawn than the TTWA and is subject to considerable influence from the Belfast housing market.

Summary description of the geography

The Ballymena and Coleraine areas are situated in the north west of Northern Ireland.

Ballymena TTWA

As figure 5.1 shows, Ballymena TTWA is coterminous with the Belfast TTWA and extends beyond the LGD boundary to include the Carnlough Ward in Larne LGD, 3 wards in the south of Ballymoney LGD, much of the Glens area of Moyle LGD and the north-west tip of Antrim LGD⁴¹.

In 2003 the Ballymena TTWA had an estimated population of around 75,000, of which 82% lived in the Ballymena LGD and 38% lived in the employment centre of Ballymena Town. In 2001 there were around 28,000 households, of which 75% were owner-occupiers, 17% were social renters and 8% were private renters.

According to the Census of Employment, in the 4 years from 2001 to 2005 the number of jobs in Ballymena LGD grew by almost 3,500 to over 29,000. This equates to a growth of 13% compared to 7% for Northern Ireland as a whole.

The population of Ballymena LGD has also expanded at a higher rate than Northern Ireland as a whole. Between 2001 and 2007 the population increased by 6% whereas the Northern Ireland population increased by 4%. However the rate of household growth in Ballymena LGD (7%) has been the same as for Northern Ireland as a whole.

Census 2001 data suggests that in terms of commuting patterns, 70% of people working in Ballymena LGD also lived in the area and out-commuting (22%) and in-commuting (11.5%) was largely restricted to the Belfast TTWA.

⁴¹ The 3 Ballymoney LGD wards are Ballyhoe and Corkey, Clogh Mills, and Killoquin Upper; the 3 Moyle wards are Glенаан, Glenariff and Glenshesk and the 2 Antrim wards are Cranfield and Drumanaway.

Coleraine TTWA

Coleraine TTWA lies to the north of the Ballymena TTWA and extends across most of Coleraine, Ballymoney and Moyle LGD⁴². In 2003 it had a population of over 88,000, including a sizeable student population attending the University of Ulster and Northern Regional College, both of which are located in Coleraine Town. At the time of the 2001 Census, around 60% of individuals and households in the Coleraine TTWA also lived in the Coleraine LGD. In addition, 70% of households were owner-occupiers, 20% were social renters and 10% rented privately.

The main employment centre of Coleraine Town is 23 miles from Derry Airport and 50 miles from Belfast International Airport. In 2003 the town had an estimated population of 24,000, which equates to 43% of the population of Coleraine LGD and 27% of the population of Coleraine TTWA. The town has been designated a growth area in the Northern Ireland Development Strategy.

The number of jobs in Coleraine LGD grew in rounded terms from 21,000 in 2001 to 25,000 in 2005. In spite of this, between 2001 and 2007 the population of Coleraine LGD (1%) grew more slowly than the population of Ballymoney LGD (10%) and Moyle LGD (4%). Household growth in Coleraine LGD (6%) was also slower than in Ballymoney LGD (12%) and Moyle (9%). The comparatively high rate of population growth in Ballymoney LGD partly reflects new housing construction in the area. Anecdotal evidence also suggests that high house prices in the Coleraine - Portstewart - Portrush triangle has encouraged prospective house purchasers to relocate here.

In 2001 some 77% of those who worked in Coleraine LGD lived in the local authority area and most in-commuters came from Ballymoney LGD (8%), Moyle LGD (4%) or Limavady (4%). Only 1% of commuters came from the BMPA. Employment and demographic trends suggest that in-commuting to Coleraine LGD may have increased since 2001.

Census 2001 migration analysis

In order to test whether the Coleraine and Ballymena TTWAs provided a reasonable approximation of housing markets in 2001 we examined Census migration patterns.

TTWA level analysis

Table 6.1 summarises patterns of residential migration for Ballymena TTWA and Coleraine TTWA and shows the proportion of people and wholly moving households that moved home in the year preceding the Census 2001. The row highlighted in blue shows the proportion of movements within each area and hence the degree to which they were self-contained.

⁴² Kilrea ward in Coleraine LGD falls within the Mid-Ulster TTWA. The wards in Moyle and Ballymoney LGD that fall inside the Ballymena TTWA are listed in the previous footnote.

Table 6.1: Origin of migrants that moved within or to Ballymena and Coleraine TTWAs in pre Census year (%)

Origin TTWA	Ballymena TTWA				Coleraine TTWA			
	All people	Age 25-44	Wholly moving household	Wholly moving owner occupier household	All people	Age 25-44	Wholly moving household	Wholly moving owner occupier household
Ballymena	76.0	77.2	76.3	70.7	3.3	4.0	3.7	3.7
Belfast	16.8	16.4	17.6	22.9	11.4	9.6	10.8	16.5
Coleraine	3.3	1.0	**	**	76.0	78.9	79.8	72.3
Derry	**	**	**	**	1.7	**	**	**
Other TTWAs	3.9	5.4	6.1	6.4	9.3*	7.5	5.7	7.5
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	5,505	2,168	1,555	768	8,359	2,919	2,190	964

The table confirms that:

- Both Ballymena TTWA and Coleraine TTWA had levels of self-containment above 75% across most measures of self-containment.
- Wholly moving owner households were more likely to have moved from another TTWA than migrants as a whole. Around 30% of owner households living in both had previously lived outwith the TTWA.

We also examined the relative magnitude of origin-based and destination-based flows for both TTWAs. To minimise any possible distorting effect arising from students, we examined not only flows for all migrants but also flows of migrants aged 25-44 and flows of wholly moving owners, with flows of more than 10% considered significant.

Table 6.2: Destination of migrants that moved from Ballymena or Coleraine TTWAs

Destination	Moved from Ballymena TTWA			Moved from Coleraine TTWA		
	All migrants	25-44	Owners	All migrants	25-44	Owners
Ballymena	76.1	76.5	74.0	2.3	1.9	3.6
Belfast	14.4	13.7	17.4	9.4	7.3	6.8
Coleraine	5.1	5.3	4.9	82.3	84.6	83.5
Other TTWAs	4.5	4.5	3.7	6	6.3	6.1
Total %	100	100	100	100	100	100
Number	5,499	2,189	734	7,727	2,724	835

Looking across tables 6.1 and 6.2 shows that in 2001:

- There was a relative absence of movement between the Ballymena TTWA and the Coleraine TTWA. In most instances 5% or fewer migrants that moved within or to Ballymena TTWA came from Coleraine TTWA. Likewise only 5% of migrants that moved within or to Coleraine TTWA came from Ballymena.
- There was no significant overlap between the Coleraine and Belfast housing markets. Although over 10% of those moving within or to Coleraine TTWA came from the Belfast TTWA, less than 10% of all migrants that originated from Coleraine TTWA moved to the Belfast TTWA, falling to 7% of wholly moving owners and migrants aged 25-44 years.
- The Belfast and Ballymena housing markets overlap. Over 20% of wholly moving owners moving within or to Ballymena TTWA came from the Belfast TTWA and 17% of wholly moving owners that originated from Ballymena moved to the Belfast area.

Movement patterns at LGD level

In terms of migration flows at the LGD level⁴³, Census migration data shows that in 2001:

- There were significant housing market links between Coleraine and Ballymoney LGD, although these links were mainly in terms of people moving from Coleraine to Ballymoney. Overall, 13% of those who moved within or to Ballymoney LGD came from Coleraine LGD, rising to 16% of wholly moving owners.
- Housing market links between Ballymena LGD and Coleraine, Ballymoney and Moyle LGDs were limited. Less than 5% of all migrants that originated from Ballymena moved to these 3 LGD combined. For migrants aged 25+ years and for wholly moving owners the figure increased to just 7%.

In 2007 Moyle LGD had a population of 16,700 and 6,500 households. It is the least populous local authority in Northern Ireland and extends across a largely rural area. Partly as a result, Census numbers relating to migrants aged 25+ years and wholly moving owners are low and many of the inter-local authority flows are based on too few cases to produce reliable estimates.

Nonetheless, the Census suggests that in 2001 this area had an open housing market that had links to the Coleraine housing market but also attracted long distance movers. In particular:

- Around 60% of those who moved within or to Moyle came from within the local authority area, around 11% came from elsewhere in the Coleraine TTWA and less than 3% came from elsewhere in the Ballymena TTWA.
- Around 64% of all migrants that originated from Moyle LGD moved within the LGD and a further 20% moved to elsewhere in the Coleraine TTWA. Less than 4% moved to elsewhere in the Ballymena TTWA.
- On the other hand, 20% of those who moved within or to Moyle were long distance movers (i.e. from outwith either the Ballymena or Coleraine TTWA), although fewer migrants that originated from Moyle (11%) moved beyond the Coleraine or Ballymena TTWA.

⁴³ As discussed in appendix 2, low turnover rates meant that many LGD flows for selected sub-groups were based on fewer than 100 people or 40 households. In most instances we therefore based our interpretation on migration flows for the total population and for those aged 25+ years to minimise the possible distorting effect of the small cell adjustment process.

Initial conclusions of HMA boundaries in 2001

On the basis of the Census evidence there were two distinct housing markets covering this area in 2001. However, the Ballymena housing market was perhaps more tightly drawn than the Ballymena TTWA and was subject to influence from the Belfast TTWA. By contrast the Coleraine housing market appeared to be more closely aligned with the Coleraine TTWA.

Owing to the distorting effect of the Census small cell adjustment process it was not possible to establish with any certainty which wards within Moyle and Ballymoney were most closely linked to either the Coleraine or Ballymena housing market. Equally it was not possible to assess whether any wards within Ballymena fell within the sphere of influence of the Belfast housing market.

Recent residential movement patterns; evidence from the CHI

We next examined residential migration patterns within CHI data for the period September 2004 to December 2007 to assess whether each TTWA still approximated a major self-contained housing market. In particular we examined ward level migration flows and whether wards experienced significant levels of in-migration from elsewhere beyond the LGD boundary in which a ward was located.

As discussed in appendix 3, we used a combination of thresholds for the proportions of in-migrants to assign clusters of wards to housing market areas. The most important thresholds for assigning wards to housing market areas were:

- At least 10% of all migrants (and 10% of those aged 25-44 years) come from elsewhere within the Ballymena TTWA or Coleraine TTWA except the LGD in which a ward is located.
- At least 20% of all migrants (and 20% of those aged 25-44 years) come from the Belfast TTWA except the LGD in which a ward (or cluster of wards) are located.

Coleraine LGD Area

Coleraine LGD is reasonably self-contained and has little connection with any other TTWA. Whereas 85% of the migrants that move within or to Coleraine LGD come from the Coleraine TTWA just 7% come from the neighbouring Derry (3%), Mid-Ulster (2%) or Ballymena (2%) TTWAs.

Migration flows suggest that the wards adjoining the Limavady LGD in the Derry TTWA have very few links with the neighbouring local authority area. By contrast, the Kilrea and Garvagh area has links to the adjoining Magherafelt LGD in Mid-Ulster TTWA. Further investigation of migration flows indicates that:

- Half (52%) of all migrants that move within or to the Kilrea and Garvagh area came from within this local area
- Although 11% of migrants that move within or to Kilrea and Garvagh area come from Magherafelt LGD, around 15% come from elsewhere within Coleraine LGD, mostly the Coleraine - Portstewart - Portrush triangle area. A further 6% come from elsewhere within the Coleraine TTWA.
- 10% of migrants that previously lived in the Kilrea and Garvagh area moved to Magherafelt LGD, 16% moved to within Coleraine LGD and 23% moved elsewhere within the Coleraine TTWA.

Although the Kilrea and Garvagh area is an area where the Mid-Ulster and Coleraine housing markets overlap, it appears to be more closely linked to the Coleraine housing market.

Ballymoney LGD

There is a significant link between the housing markets of Ballymoney LGD and Coleraine LGD. Between September 2004 and December 2007, 15% of migrants that moved within or to Ballymoney LGD came from Coleraine LGD and 19% came from elsewhere within the Coleraine TTWA. By contrast, 5% came from elsewhere in the Ballymena TTWA.

Ballymoney town and its hinterland area⁴⁴ is most closely linked to the Coleraine housing market; over 20% of migrants that move within or to Ballymoney Town and its 5 adjoining wards come from elsewhere within the Coleraine TTWA. Likewise, 14% of migrants that originated from the Ballymoney town area move to elsewhere in the Coleraine TTWA whereas only 3% move to the Ballymena TTWA. For those aged 25-44 the proportion that moves to elsewhere within the Coleraine TTWA increases to 32%.

Four other wards to the south and east of Ballymoney LGD are also connected to the Coleraine housing market. One of these wards is Ballyhoe and Corkey, which although in the Ballymena TTWA has few housing market links with it⁴⁵. Overall, 66% of the migrants that move within or to Knockaholet, Stranocum, Dunloy and Ballyhoe and Corkey come from Ballymoney LGD and a further 16% come from elsewhere in the Coleraine TTWA whereas 4% come from elsewhere in the Ballymena TTWA. Migration flows amongst those aged 25-44 years display a similar pattern.

By contrast, Killoquin Upper and Clogh Mills, which fall within the Ballymena TTWA, remain more closely connected with the Ballymena housing market. Some 30% of migrants that move within or to this area come from elsewhere within the Ballymena TTWA, with virtually all of these coming from Ballymena LGD. Likewise 23% of migrants that previously lived in this area move to the rest of the Ballymena TTWA, rising to 46% of those aged 25-44 years.

Moyle LGD Area

Overall, 73% of those moving within or to Moyle come from within the local authority area, 11% come from elsewhere in the Coleraine TTWA and 3% from the Ballymena TTWA.

CHI data confirms that the reach of the Coleraine housing market matches the TTWA boundary. Looking across the 12 wards in this area which stretches from Bushmills and Ballylough down to Ballycastle and Glenshesk:

- Some 14% of migrants moving within or to this area come from elsewhere within the Coleraine TTWA and 2% come from the Ballymena TTWA. For those aged 25-44 years the figures were 15% and 2% respectively.
- 16% of migrants that previously lived in this area moved elsewhere within the Coleraine TTWA while 4% moved to the Ballymena TTWA. The migration patterns for those aged 25-44 years were very similar.

⁴⁵ Some 22% of migrants that moved within or to this ward come from elsewhere in the Coleraine TTWA whereas 8% come from elsewhere in the Ballymena TTWA. Origination flows show a similar picture for this ward.

The area covering Glendun, Glenann and Glenariff falls within the Ballymena TTWA. It had an estimated population of some 4,000 in 2003, and assigning it to a specific housing market is difficult because:

- Few people come to or move away from the Glens area. Based on CHI data we estimate that 7.3% of the population change address each year compared to 10.2% nationally. Moreover, over 3 out of 4 migrants that originate from this area remain in the area. On average just 70 people a year come to this area from another LGD and similar numbers leave and move to another LGD.
- The age profile of those coming from another LGD is distinctive; 24% of the 239 migrants that came from another LGD over the 40-month period for which we have data were aged 51+ years compared to 15% of all Northern Ireland migrants and 18% of those who moved to elsewhere in Moyle LGD. Thus origin-based migration flows in the Glens area appear to be influenced by those moving in anticipation of or following retirement⁴⁶.
- Neither destination-based nor origin-based flows suggest that this area falls into the catchment area of any nearby employment centre

The only significant flows of at least 10+% are in terms of the proportions of migrants that moved from the 3 Glens area to elsewhere in the Ballymena TTWA. Around 11% of migrants that originate from the glens area, rising to 13% of those aged 25-44 years, moved to elsewhere within the Ballymena TTWA.

In the absence of evidence to the contrary, we therefore have assigned these 3 overlap wards to their designated TTWA.

Ballymena LGD

CHI data confirms that the housing market in Ballymena LGD remains self-contained. Close to 80% of people who moved within or to Ballymena come from the local authority area. Less than 5% of migrants move to or come from another specific LGD or TTWA with the exception of the Belfast TTWA. Overall 12% of migrants come from the Belfast TTWA and 10% of migrants that originate from Ballymena move to the Belfast TTWA.

The employment centre of Ballymena remains at the heart of this housing market. Around 86% of all migrants that move within or to this area previously lived within the town and just 8% of migrants come from the Belfast TTWA.

By contrast, the 3 wards that form the southern boundary of Ballymena LGD have an open housing market and are subject to major influence from the Belfast TTWA. Looking at the Grange, Kells and Glenwhirry area as a whole, of those moving within or to this area in the 40 months to December 2007, 36% previously lived in one of these 3 wards. A further 30% came from the Belfast TTWA whereas 28% came from Ballymena town or the rest of the Ballymena TTWA⁴⁷

In terms of Broughshane and Slemish, 15% of those that move within or to this area come from the Belfast TTWA, rising to 19% of migrants aged 25-44 years. This suggests this is an area where there is some overlap between the Ballymena and Belfast housing markets. However, Ballymena town continues

⁴⁶ Ballycastle town and the Glens attract migrants from the Belfast TTWA, including a sizeable proportion of older migrants. However, destination based flows suggest that fewer numbers or proportions of people from the town or the Glens area move to the Belfast TTWA.

⁴⁷ Close to a fifth of all people moving within or to this area come from the Belfast Metropolitan Area whereas around 15% come than from Ballymena town

to exert the greatest influence. Over a quarter of migrants that move within or to this area come from Ballymena town whereas just 5% come from the Belfast Metropolitan area.

In the remaining 6 Ballymena wards which lie to the north of Ballymena town⁴⁸ some 80% of migrants come from within Ballymena LGD, including 26% that come from the Ballymena employment centre. Across this area as a whole no more than 8% come from or move to the Belfast TTWA.

Summary

Based on our analysis of Census and CHI migration patterns the Ballymena housing market area is more tightly drawn than the TTWA. Specifically:

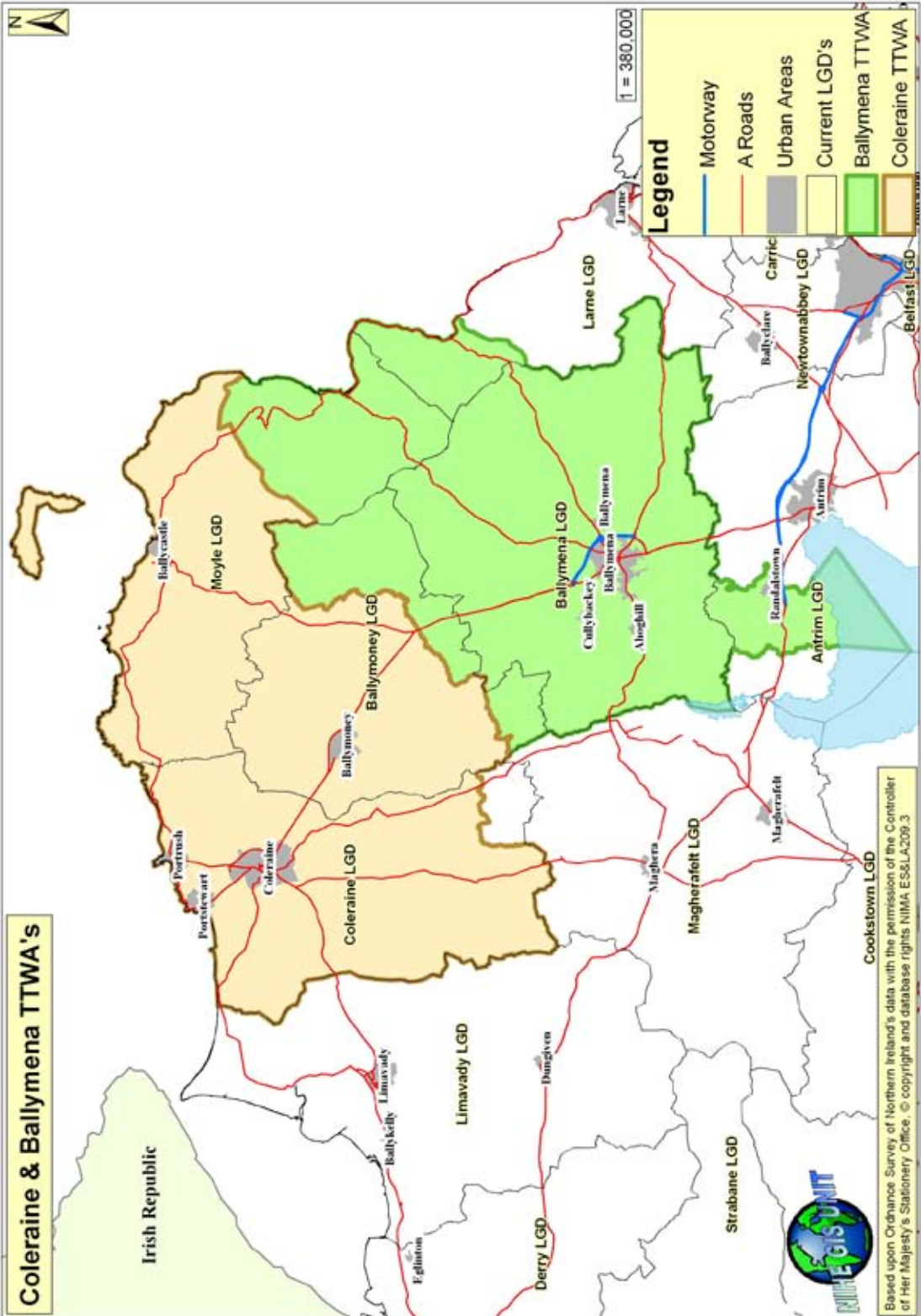
- It includes all of Ballymena LGD other than the south-eastern area that adjoins Antrim and Newtonabbey, which now appears to be more closely connected to the Belfast housing market.
- It incorporates the Glens area of Moyle LGD and the wards of Killoquin Upper and Clogh Mills in Ballymoney LGD, although these less densely populated wards have very limited connection to any major employment centre.
- In contrast to the TTWA the housing market area does not extend into Antrim LGD or Larne LGD.

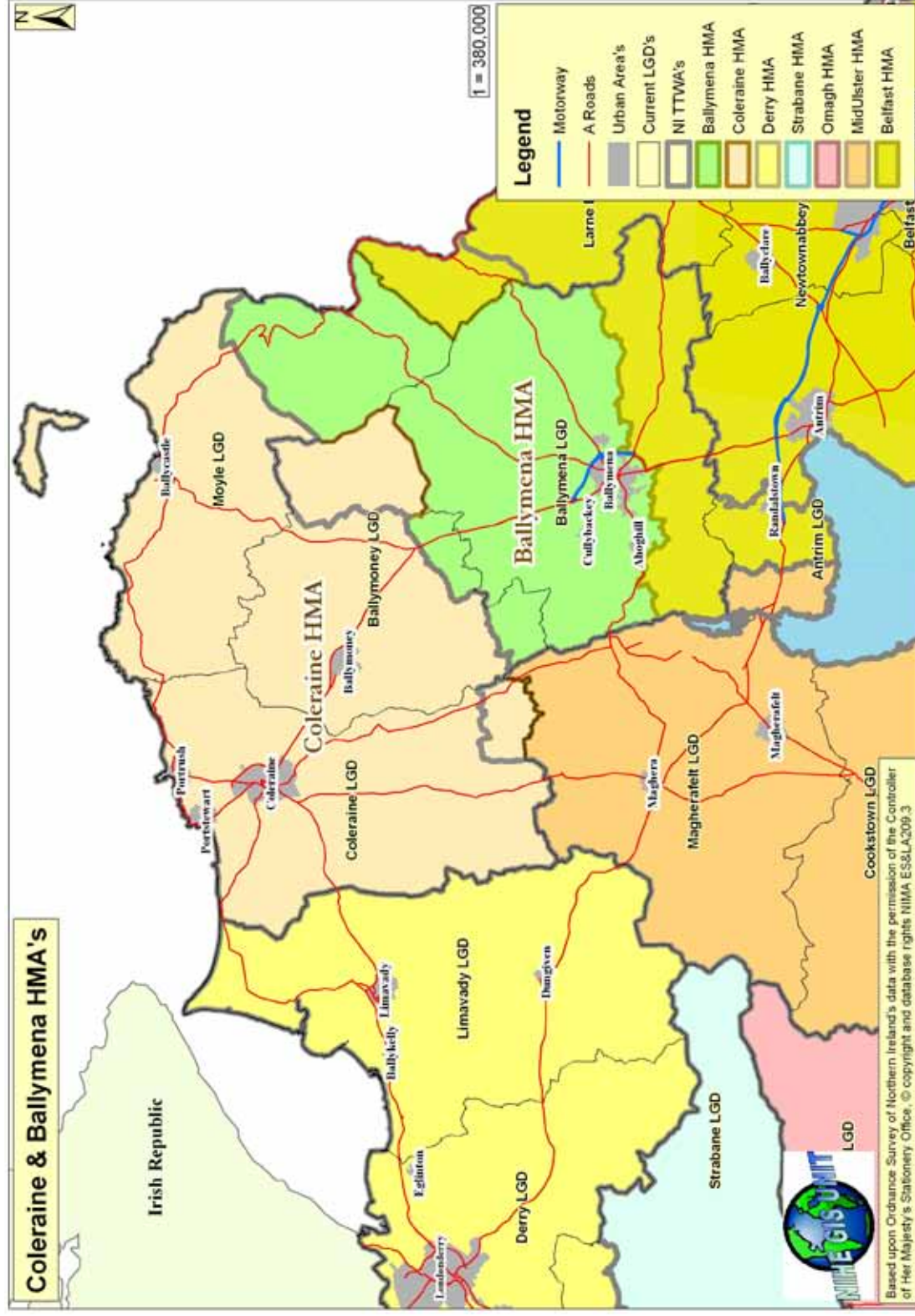
In contrast the Coleraine housing market has extended beyond the TTWA boundary to include the whole of Coleraine, and all of Ballymoney LGD and Moyle LGD other than the more remote wards, which remain somewhat more connected to the Ballymena housing market.

The map below summarises our proposed housing market areas and how they compare with the 2001 TTWAs.

⁴⁸ Ahoghill, Craigwarren, Cullybackey, Dunminning, Glenravel, and Portglenone

Figure 6.1: Ballymena and Coleraine TTWA's





derry, limavady & strabane

Introduction

This section explores the spatial delineation of the major housing markets operating in the Derry and Strabane TTWAs. The material presented below supports the conclusion that there are two housing markets, which align with the TTWAs.

Summary description of the geography

The Derry, Limavady and Strabane area is situated in the northwest corner of Northern Ireland and stretches from the Atlantic coast down along the border with County Donegal in the Republic of Ireland. Letterkenny is situated 30 miles from City of Derry Airport. To the east are the Mid-Ulster and Omagh TTWA.

Derry TTWA

The Derry TTWA area is based around the employment centre of Derry Urban Area (DUA), which is also an important administrative and educational centre. Its boundary extends beyond the Derry LGD to include Limavady LGD and the Slievekirk ward in Strabane LGD. In 2003 the area had an estimated population of almost 142,000. At the time of the 2001 Census, some 70% of households were owner-occupiers, 20% were social renters and 10% were private renters.

Between 2001 and 2007 the population of Derry LGD grew by 3% to 108,500 whilst household numbers increased by 10% to almost 40,000. In 2001 around 35,000 residents in the LGD worked within the boundaries of Northern Ireland, with 90% of these employed within the LGD itself. A further 700 residents worked in the Republic of Ireland.

Limavady town is a short drive from the DUA and Coleraine Town and is home to over a third of the population of Limavady LGD. Between 2001 and 2007 the population of Limavady LGD grew by 5.5% to over 34,000 and household numbers grew by 13% to over 12,000. Experian (2008) suggest this growth partly reflects migration into the area by those seeking recently built private housing. A significant proportion of the working population works outside the local authority area. In 2001, of the almost 13,000 Limavady LGD residents working in Northern Ireland, 20% commuted to Derry and 7% to Coleraine LGD. Most in-commuters also came from these two areas.

Strabane TTWA

Strabane TTWA covers 15 out of the 16 wards that make up Strabane LGD, including those that make up the town of Strabane, which is close to the border with the Republic of Ireland and Lifford Town in County Donegal. In 2001 some 70% of households owned their home, 21% rented from a social landlord and 9%

rented privately. In the period 2001-7 Strabane LGD experienced slower population growth (2.9%) than Northern Ireland (4%) as a whole, but household growth (9%) has been slightly higher than the overall average for the province (8%).

Although the number of jobs has fallen in recent decades, 70% of the nearly 13,000 Strabane residents that worked in Northern Ireland in 2001 were employed within the area. Out-commuting was largely limited to Derry LGD (14%) whilst in-commuters in the main came from Derry (6%) and Omagh (4%). A further 400 worked in the Republic of Ireland.

Census 2001 migration analysis

In order to test whether TTWAs provided a reasonable approximation of housing markets in 2001 we examined Census migration patterns.

TTWA level analysis

Table 7.1 summarises residential migration patterns for the Derry TTWA and the Strabane TTWA. It summarises the proportion of people and wholly moving households that moved home in the year preceding the Census 2001⁴⁹. The row highlighted in blue shows the proportion of movements within each area and hence the degree to which they were self-contained Census data indicates that in 2001:

- Both Strabane and Derry have high level of self-containment.
- Wholly moving owner households, particularly in Strabane TTWA, were more likely to have come from another TTWA than other wholly moving households. Around a quarter of owner households living in Strabane had previously lived outwith the TTWA, although we would caution that actual numbers were low.

Table 7.1: Origin of migrants that moved within or to Derry and Strabane TTWAs in pre Census year (%)

Origin TTWA	Derry TTWA				Strabane TTWA			
	All people	Age 25-44	Wholly moving household	Wholly moving owner occupier household	All people	Age 25-44	Wholly moving household	Wholly moving owner occupier household
Derry	86.6	85.5	91.1	87.1	6.1	7.9	6.8	9.3
Strabane	1.8	2.3	2.0	2.1	81.3	75.9	87.0	76.8
Coleraine	1.6	1.4	1.4	2.1	0.9	0.8	0.5	1.5
Omagh	0.8	1.0	0.3	0.6	4.3	4.0	1.0	1.5
Other TTWAs	9.2	9.8	5.2	8.1	7.4	11.5	4.7	10.9
Total %	100	100	100	100	100	100	100	100
Number	9,978	3,777	2,732	1,003	2,027	758	575	194

⁴⁹ Excluding migrants from the rest of the UK, to permit like for like comparisons with CHI data.

We also examined the relative magnitude of origin-based and destination-based flows for both TTWA. To minimise any possible distorting effect arising from students, we examined not only flows for all migrants but also flows for migrants aged 25-44 and for wholly moving owners. Flows of more than 10% were considered significant.

Table 7.2: Destination of migrants that moved from Derry or Strabane TTWAs in pre Census year

Destination	Moved from Derry TTWA			Moved from Strabane TTWA		
	All migrants	25-44	Owners	All migrants	25-44	Owners
Derry TTWA	86.4	88.8	91.5	7.8	10.8	10.8
Strabane	1.2	1.6	1.9	73.1	73.3	76.8
Coleraine	1.7	2	1.6	1.6	0.8	0
Omagh	0.5	0.2	0.3	6	7.4	0
Other TTWAs	10.2	7.4	4.7	11.5	7.7	12.4
Total %	100	100	100	100	100	100
Number	10,001	3,637	955	2,254	784	194

Looking across tables 7.1 and 7.2 shows that in 2001:

- There was little movement between the Derry TTWA and Strabane TTWA. Although around 11% of migrants aged 25-44 and owners that previously lived in Strabane moved to Derry, this involved small numbers of people and households. It therefore appears that in 2001 there was no significant overlap between the housing markets operating in these two areas.
- Neither TTWA showed any connection with any neighbouring TTWA. Migration flows between Strabane and Omagh TTWAs were 7% or less. Likewise flows between Derry and Coleraine TTWAs were generally 2% or less.

Movement patterns at LGD level

In terms of migration flows at the LGD level⁵⁰, Census migration data shows that in 2001:

- There were significant housing market links between Derry LGD and Limavady LGD. Reflecting the different scale of population of these 2 local authority areas, these links were mainly in terms of people moving from Derry to Limavady. Overall 10% of migrants that moved within or to Limavady LGD came from Derry LGD, increasing to 11% of those aged 25-44 years and 14% for wholly moving owners.
- There were no significant housing market links between Limavady and Coleraine LGD. Just 2% of all migrants that moved within or to Limavady came from Coleraine LGD. For migrants aged 25-44 and wholly moving owners the proportions were similar, although these figures were based on small numbers of cases.

⁵⁰ As discussed in appendix 2, flows based on fewer than 100 people or 40 households should be treated with considerable caution because of the possible distorting effect of the small cell adjustment process

- Housing market links between Derry LGD and Strabane LGD were minimal. Less than 5% of all migrants that moved within or to Strabane LGD came from Derry LGD and less than 7% of all migrants that had previously lived in Strabane had moved to Derry LGD⁵¹. Census numbers relating to flows between these two local authorities in respect of migrants aged 25+ years and wholly moving owners were too small to produce reliable estimates.
- Less than 6% of migrants that previously lived in Strabane LGD moved to Omagh LGD. The other census indicators were based on too few cases to provide reliable estimates.

Initial conclusions of HMA boundaries in 2001

On the basis of the Census evidence it appeared that there were two distinct housing markets covering this area in 2001.

Owing to the distorting effect of the Census small cell adjustment process it was not possible to establish with any certainty whether the Slievekirk ward in Strabane LGD fell within the Derry housing market as well as this TTWA. Nor was it possible to examine whether wards on the eastern edge of Limavady formed an area of overlap between the Derry and Coleraine housing markets.

Recent residential movement patterns; evidence from the CHI

We next examined residential migration patterns within CHI data, looking for clusters of wards experiencing significant levels of in-migration from beyond the LGD boundary in which the clusters are located. The critical threshold used for this was that at least 10% of all migrants (or of those aged 25-44 years) come from another LGD or elsewhere within a TTWA except the LGD in which the wards are located⁵².

Derry LGD

Housing market activity is very self-contained within the Derry LGD. Around 90% of migrants moving within or to Derry LGD already live in the local authority area. Moreover, there are no significant outflows to any other local authority in Northern Ireland. Migration patterns for those aged 25-44 were similar.

In only one of the 30 wards that comprise Derry LGD does the proportion of migrants that come from within Derry LGD fall below 80%. This is Banagher ward, located at the south of the local authority and adjacent to Limavady. Of the migrants that move within or to this ward, 78% come from elsewhere in the LGD and 11% come from Limavady LGD.

Limavady LGD

In the 40 months to December 2007, some 960 migrants moved to Limavady LGD from Derry LGD, of which 42% were aged 25-44 years. Over 9% of all migrants that move within or to Limavady come from Derry LGD rising to around 11% of migrants aged 25-44 years. By comparison, less than 3% come from the Coleraine LGD.

⁵¹ These figures are significantly lower than TTWA flows suggesting that a large proportion of flows involved people and households moving between Derry and the Slievekirk ward.

⁵² In addition, to ensure that migration flows were based on a minimum reasonable number of cases, we discounted flows that were based on less than 100 people or (if the number was greater) less than 2% of the local population for each cluster of wards. Population numbers are based on NISRA 2003 small area population estimates.

The area from the Derry LGD boundary up to but not including Limavady town also has significant connections with the Derry housing market⁵³. More specifically, 14% of those moving within or to this area come from Derry LGD whereas less than 2% come from Coleraine LGD. For migrants aged 25-44, the respective figures are 16% and 1%⁵⁴.

Limavady town and the three wards that lie between the town and the Coleraine LGD boundary⁵⁵ appear to be a highly localised housing market where the overarching housing markets of Derry and Coleraine overlap, although the influence of both is significantly below the 10% threshold.

Looking at this area in more detail:

- Over 3 out of 4 of those moving within or to this area come from the area, while upwards of 85% come from within Limavady LGD.
- The most significant LGD origins for in-migrants are Derry LGD (5%) and Coleraine (4%) whilst the most significant employment centre of origin for in-migrants are the Derry Urban Area (3%), the Belfast Metropolitan area (2%) and Coleraine (1%).
- Although marginally more migrants that previously lived in this area moved to Derry LGD than to Coleraine LGD, in both instances this involved fewer than 300 migrants or 5% of the total.

In the absence of clear evidence to the contrary, we therefore assigned these 'overlap wards' on the basis of their designated TTWA. In this context it is worth noting that in the case of Limavady town, the most significant destinations for out-commuters in 2001 were the Derry Urban area (13%) and Coleraine (6%).

Strabane LGD

CHI analysis confirms that the Strabane housing market aligns with the Strabane TTWA and that with the exception of the Slievekirk ward the area has few links to elsewhere in Northern Ireland.

CHI evidence suggests that rates of self-containment continue to exceed 80% for all migrants as well as for migrants aged 25-44 years. At the LGD level, no origin-based or destination-based flows between Strabane LGD and any other local authority area in Northern Ireland exceed 5%

Although the town of Strabane has a reasonably open housing market, most migrants that move to the town come from elsewhere in the local authority area. Overall less than 7% of those that move within or to Strabane town originate from another LGD in Northern Ireland

However, consistent with the TTWA boundary, the Slievekirk ward appears to be closely connected with the Derry housing market area. Of 594 people that moved within or to this ward in the 40 months to December 2007, 218 or 37% moved within the ward. In terms of the origins of the others:

⁵⁴ In addition, over 10% of migrants that previously lived in this area had moved to Derry LGD.

⁵⁵ Limavady Town includes the 5 wards of Coolassan, Enagh, Greystone, Rathbrady and Roeside. The 3 wards to the east of the town are Aghanloo, Forest and Magilligan

-
- 194 came from Derry LGD, which was equivalent to 33% of all migrants. For those aged 25-44 years this proportion increased to 38%.
 - Just 114 or 19% came from the rest of Strabane LGD, including 5% that came from Strabane town.

In terms of destination-based flows, of the 519 migrants that had previously lived in this ward, 24% moved to Derry; for those aged 25-44 the proportion increased to 28%. It is also pertinent to note that the Local Government Boundary Commissioner has proposed that the Slievekirk ward be split between Derry and Strabane LGD.

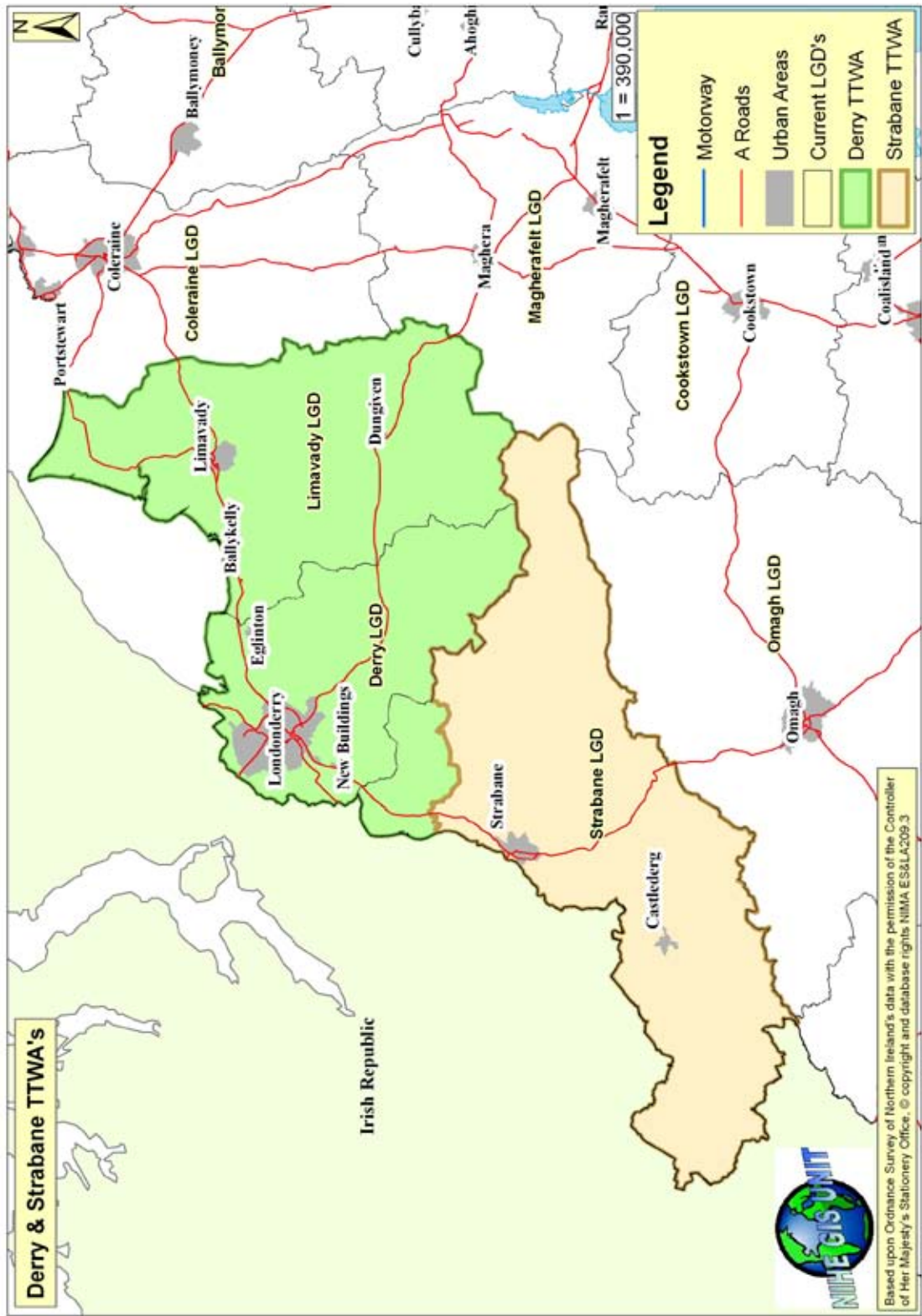
Some other wards in Strabane LGD appear to have links with Omagh⁵⁶. However these cross-border flows typically involve very small numbers of migrants reflecting the low turnover rates found in rural areas. Furthermore, a higher proportion of migrants come from elsewhere within the Strabane LGD than from Omagh LGD. We therefore assigned all 5 of these wards on the basis of their designated TTWA.

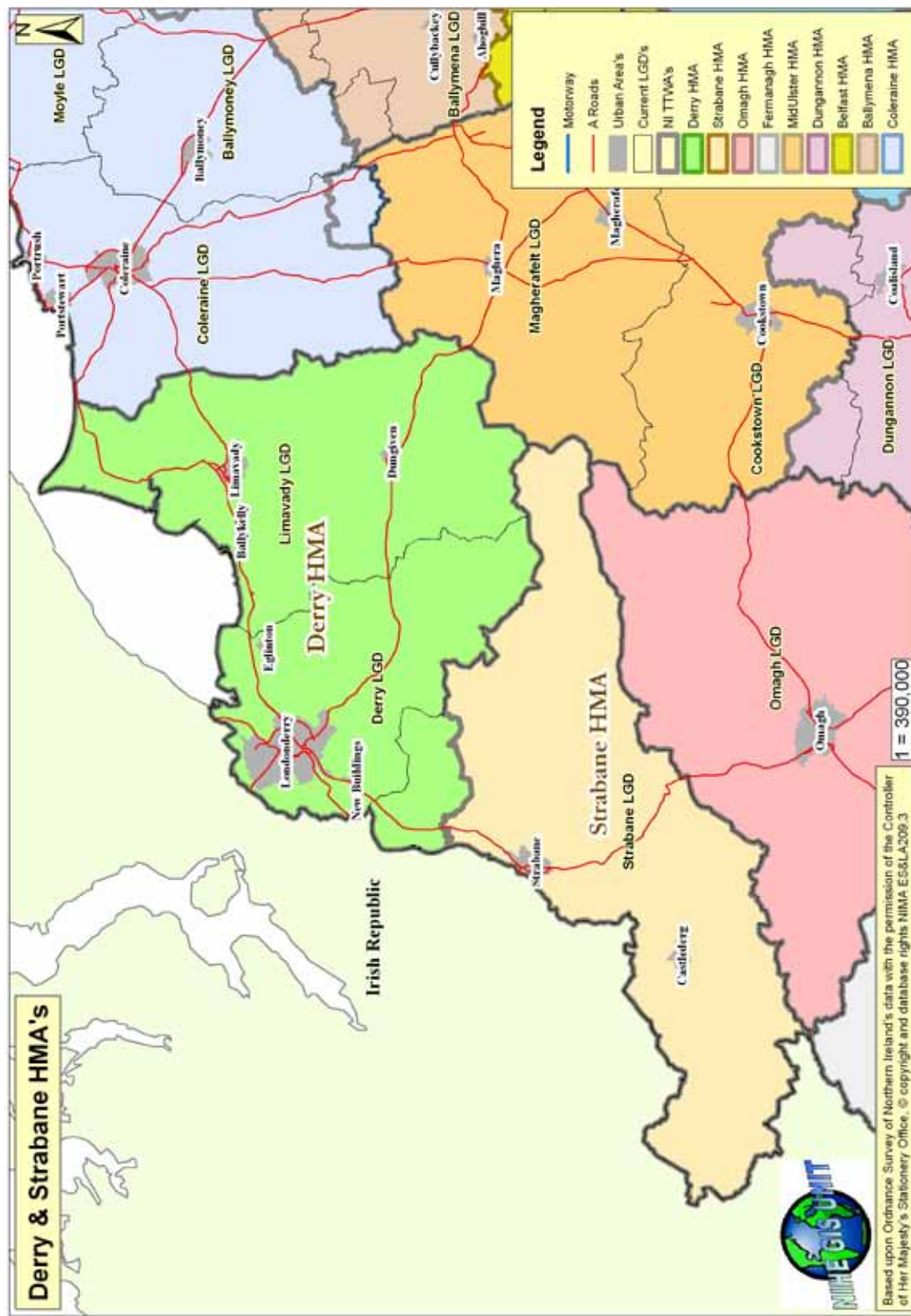
Summary

The map below summarises our understanding of the Derry and Strabane housing market areas. Our analysis of CHI data confirms that the housing market boundaries of both Derry and Strabane are aligned with their respective TTWA.

⁵⁶ These wards are Castlederg, Clare, Glenderg, Plumbridge and Newtonstewart. In only 2 of these wards did both origin and destination based flows exceed 10% but in all instances this was based on fewer than 100 people.

Figure 7.1: Derry and Strabane TTWAs





omagh, mid-ulster, dungannon & enniskillen

Introduction

This section explores the spatial delineation of the housing markets operating in the Omagh, Mid-Ulster, Dungannon and Enniskillen TTWA. Based on the material presented below we believe each of these four TTWAs provide a reasonable approximation of respective overarching housing market areas in this part of Northern Ireland.

In common with the Strabane TTWA, these four TTWAs contain villages and other sparsely populated areas that exhibit reasonably high rates of self-containment and low turnover rates. As a result, whilst these more remote areas appear to be subject to some influence from the local employment centre they are certainly not dominated by it⁵⁷.

Summary description of the geography

As figure 8.1 shows, the area under consideration extends from the northwest corner of Lough Neagh and the Sperrin Mountains to the border with the Republic of Ireland.

Mid-Ulster TTWA

Mid-Ulster TTWA extends across Magherafelt LGD and all of Cookstown, except Pomeroy and Stewartstown, which fall within the Dungannon TTWA. It also includes the Kilrea area of Coleraine LGD and Toome in Antrim LGD. In 2003 the area had an estimated population of over 75,000. In 2001, some 75% of households were owner-occupiers, 15% were social renters and 10% rented privately.

Cookstown LGD had an estimated population of over 35,000 and 12,000 households in 2007. Around a third of the district's population live in Cookstown Town, which acts as an employment centre for the wider rural area. Between 2001 and 2007 the population expanded by 8% and household numbers expanded by 11%. This is considerably faster than the Northern Ireland average of 4% and 8% respectively.

Between 2001 and 2005 this LGD saw employment grow by nearly 1,600 jobs to around 10,500. 2001 Census data indicates that two thirds of the 12,000 workers that lived in the Cookstown LGD also worked within the area. The most significant destinations for out-commuters were Dungannon (11%) and Magherafelt (8%), which were also the main locations in terms of the origins of in-commuters.

Magherafelt LGD had an estimated population of nearly 40,000 in 2007, some 8% higher than in 2001. Over the same period the household population increased by 12% to 14,500. More than half of the population live in the countryside. Around a fifth live in Magherafelt Town and a quarter live in other towns and villages.

⁵⁷ In addition interpretation of migration flows for some wards is complicated by the fact that significant proportions (if not necessarily numbers) of moves involve longer distances, typically people coming from the Belfast TTWA. From the age profile of migrants it is appropriate to assume that many of these moves are linked to a change in education status or other major life change.

In the 4 years to 2005 the number of jobs increased by around 1,800 to 14,000. In 2001 over 16,000 working people were resident in the local authority area, 69% of whom also worked in the area. The main destinations for out-commuters were the BMDA (8%), Cookstown (6%) and Antrim (4%). The main origins of in-commuters were Cookstown (7%), Antrim (3%) and BMDA (2%).

Dungannon TTWA

Dungannon TTWA extends across the Dungannon and South Tyrone LGD, excepting the areas of Clogher and Fivemiletown, which fall within the Enniskillen TTWA. In 2003 this TTWA had a population of 50,000. In 2001 some 74% of households were owners, 15% were social renters and 11% were private renters.

Between 2001 and 2005 the numbers of jobs in the LGD increased by over 2,500 to 20,000. In terms of commuting patterns, Dungannon is reasonably self-contained (73%) although around 10% commute to the Craigavon TTWA and around 5.5% to the BMDA area. The most significant origins of in-commuters are Craigavon TTWA (9%) and Cookstown (8%).

The main employment centre is Dungannon, but the town accounts for less than a quarter of population of the LGD of which it is part. The LGD has experienced faster population growth (14%) and household growth (11%) than Northern Ireland overall.

Omagh TTWA

Omagh TTWA is coterminous with the local authority area and in 2003 had a population of almost 50,000. In 2001 72% of households were owners, 16% were social renters and 12% rented privately. In the period to 2007 population growth (7%) and household growth (11%) have been above that for Northern Ireland as a whole. From 2001 to 2005 the numbers of jobs in the LGD increased by over 2,000 to 18,000.

The main centre of employment is Omagh, which is home to 40% of the population of Omagh LGD. It lies some distance from the Derry, Craigavon and Belfast urban areas. Commuting patterns suggest Omagh is very self-contained (83%). Just 4% commute to Fermanagh LGD and 3% commute to Dungannon LGD, which are also the main origins of in-commuters, suggesting limited connection to other areas in Northern Ireland. Around 400 workers also commute to the Republic of Ireland, but the precise destination is not known.

Enniskillen TTWA

This area extends across Fermanagh LGD and into the southern tip of Dungannon LGD. In 2003 this area had a population of around 61,000 and in 2001 around 74% of households were owners, 15% were social renters and 11% rented privately. The Enniskillen TTWA has experienced above average population (6%) and household growth (10%), and saw employment increase by 9% to 20,000 between 2001 and 2005.

Some 90% of those living in the Enniskillen TTWA that work within Northern Ireland also work within the area. The only noteworthy in-commuting or out-commuting link within Northern Ireland is with the neighbouring local authority of Omagh (5%). Census data suggests that around 900 people commute to the Republic of Ireland.

Census 2001 migration analysis

In order to test whether TTWAs provided a reasonable approximation of housing markets in 2001 we examined Census migration patterns to determine the degree of self-containment at TTWA and LGD level. Flows between LGD and TTWA in excess of 10% were considered significant.

To minimise any possible distorting effect of students we examined movement patterns for migrants aged 25-44 and for wholly moving owners as well as for all migrants.

Residential movement patterns between TTWAs

Table 8.1 shows origins of migrants that moved within or to each of the four TTWAs, whilst table 8.2 shows the destination of migrants that moved within or from each of them. The rows highlighted in blue show the degree to which the housing markets in each TTWA were self-contained. The tables indicate that in 2001:

- The housing market in all four TTWAs appeared to be self-contained, with most indicators exceeding 75%.

Table 8.1: Origin of migrants that moved within or to Dungannon, Enniskillen, Mid-Ulster and Omagh TTWAs in pre Census year (%)

Origin TTWA	Dungannon TTWA				Enniskillen TTWA				
	All people	Age 25-44	Wholly moving household	Wholly moving owner occupier household	All people	Age 25-44	Wholly moving household	Wholly moving owner occupier household	
Dungannon	76.1	74.7	76.8	77.3	0.7	1.3	1.5	2.1	
Enniskillen	2.6	2.5	1.8	1.6	85.1	77.6	83.9	81.2	
Mid-Ulster	3.6	2.9	5.9	8.1	0.4	0.0	0.6	0.7	
Omagh	3.4	2.8	2.2	0.8	2.7	4.3	4.0	2.8	
Craigavon	5.6	1.5	1.4	2.0	1.0	0.2	0.4	0.9	
Other TTWAs	8.7	15.6	11.9	10.2	10.1	16.6	9.6	12.3	
Total %	100	100	100	100	100	100	100	100	
Number	2,796	1,115	813	370	3,536	1,308	971	430	

Table 8.2: Destination of migrants that moved from Dungannon, Enniskillen, Mid-Ulster and Omagh TTWAs in pre Census year

Destination	Moved from Dungannon TTWA			Moved from Enniskillen TTWA			
	All migrants	25-44	Owners	All migrants	25-44	Owners	
Dungannon	66.3	74.7	72.0	1.8	2.5	1.4	
Enniskillen	0.7	1.3	2.3	76.4	77.6	80.4	
Mid-Ulster	5.0	6.2	5.3	0.5	0.2	0.0	
Omagh	1.6	2.1	2.3	3.4	5.6	5.5	
Craigavon	5.6	3.9	1.5	1.5	2.3	0.4	
Other TTWAs	20.8	11.8	16.6	16.4	11.8	12.3	
Total %	100	100	100	100	100	100	
Number	3,210	1,160	397	3,938	1,442	434	

	Mid-Ulster TTWA				Omagh TTWA			
	All people	Age 25-44	Wholly moving household	Wholly moving owner occupier household	All people	Age 25-44	Wholly moving household	Wholly moving owner occupier household
	3.8	6.2	4.2	4.1	1.8	2.1	1.8	3.2
	0.4	0.2	0.3	0.0	4.6	5.6	4.0	8.6
	79.5	80.4	80.5	79.9	0.3	0.2	0.7	0.0
	1.0	1.0	1.0	0.6	80.8	76.4	84.7	82.9
	0.7	0.3	0.4	0.5	1.0	0.4	0.2	0.9
	14.6	11.9	13.6	14.9	11.5	15.3	8.6	4.4
	100	100	100	100	100	100	100	100
	4,291	1,755	1,153	507	2,905	1,146	823	280

	Moved from Mid- Ulster TTWA			Moved from Omagh TTWA		
	All migrants	25-44	Owners	All migrants	25-44	Owners
	2.3	2.9	5.6	3.0	2.8	1.1
	0.3	0.0	0.6	3.0	4.3	4.3
	77.0	80.4	76.3	1.4	1.0	1.1
	0.2	0.2	0.0	73.5	76.4	83.5
	0.6	0.9	0.4	0.8	1.0	0.0
	19.6	15.6	17.1	18.3	14.5	10
	100	100	100	100	100	100
	4,431	1,758	531	3,193	1,197	278

- In contrast to the position for the more urban TTWAs, there was no clear evidence that wholly moving owner households were more likely to move between TTWAs than other migrant groups.

Destination based levels of self-containment for all migrants are significantly lower than for those aged 25-44 and for owner-occupiers, particularly in the Dungannon TTWA. This in large part reflects the movement of students. In the case of Dungannon for example, around 800 or 25% of all migrants who moved from Dungannon were aged 18-24 years. Moreover, 53% of these migrants moved to the Belfast TTWA and just a third moved within the area⁵⁸.

Tables 8.1 and 8.2 also reflect:

- Little movement between the four TTWAs. For example less than 10% of migrants that moved within or to Dungannon TTWA came from the Mid-Ulster TTWA across all four indicators of origin-based containment. Similarly, less than 10% of those who had previously lived in Dungannon TTWA moved to Mid-Ulster TTWA.
- Little connection between any of the four TTWAs and any other neighbouring TTWA. For example, less than 6% of those that moved within or to Dungannon came from Craigavon TTWA⁵⁹.

Movement patterns at LGD level

Due to the low number of moves involving two of the 5 local authorities in this area it was difficult to establish many valid flows⁶⁰. The only potential housing market link identifiable in the data was between Magherafelt LGD and Cookstown LGD. Census data shows that 10% of those who moved within or to Cookstown came from Magherafelt. However, other destination and origin based flows between these two authorities were all less than 10%.

More generally, the only significant inter-district flows tended to be long distance moves to Belfast. As expected many of those moving to Belfast were under 25.

Initial conclusions of HMA boundaries in 2001

In 2001 it is likely that there were 4 distinct housing markets in this area, which were aligned to the TTWA boundaries. However, due to the small numbers of moves made and the Census small cell adjustment process it was not possible to assess whether TTWA and HMA boundaries differed.

⁵⁸ By comparison only a fifth of all Northern Ireland migrants were aged 18-24 years and (with the exception of the Belfast TTWA) the proportion of destination-based migrants aged 18-24 years that moved to Belfast TTWA ranged from 25% to 35%.

⁵⁹ In terms of migrants that moved within or to Mid-Ulster, less than 3% came from Coleraine TTWA, and less than 3% came from the Ballymena TTWA.

⁶⁰ As discussed in appendix 2, flows based on fewer than 100 people or 40 households should be treated with considerable caution because of the possible distorting effect of the small cell adjustment process. As a result many flows were not considered valid. For example in the case of Fermanagh LGD, considerably less than 100 people came from Omagh LGD and less than 50 came from Dungannon LGD.

Recent residential movement patterns; evidence from the CHI

We next examined residential migration patterns within CHI data, looking for clusters of wards experiencing significant levels of in-migration from beyond the LGD boundary in which the clusters are located. The critical threshold used for this was that at least 10% of all migrants (or of those aged 25-44 years) come from another LGD or elsewhere within a TTWA except the LGD in which the wards are located⁶¹.

Magherafelt LGD and Cookstown LGD

Around 80% of migrants that move within or to Magherafelt come from within the local authority area. Around 25% of in-migrants come from Cookstown LGD. Although this is more than the combined proportion of those that come from the neighbouring local authorities of Ballymena and Antrim it is still equivalent to less than 5% of all migrants that move within or to Magherafelt.

The housing market that operates across Cookstown LGD is also very self-contained. CHI data also shows that 80% of migrants moving within or to Cookstown come from within the area. Again, less than 5% of migrants come from Magherafelt.

Most migration flows between these two local authorities are concentrated in the area that stretches from Magherafelt town south to the edge of but not including the town of Cookstown. Nonetheless, these flows are below the 10% threshold.

Overall, the spatial concentration and the scale of migration flows are not therefore sufficient to suggest a significant connection between the housing markets that operate across these two LGDs.

Migration patterns of those that previously lived in the town of Magherafelt suggest that the LGD boundary may provide a better approximation of the housing market boundary. In general, at least 10% of those who moved within or to each ward in the LGD came from the main town⁶². By contrast, the southern tip of Cookstown LGD appears to have links to Dungannon.

Dungannon LGD

Dungannon LGD also appears to be a highly localised housing market that has little connection with the housing markets operating in neighbouring authorities. At the local authority level, over 80% of migrants that move to or within Dungannon come from within the area. The proportions of all migrants that come from any of the neighbouring five local authority areas or the Craigavon TTWA are all below 5%.

Flows between Dungannon and surrounding LGDs generally involve moves between wards in close proximity to each other and small numbers of people. We therefore concluded it to be appropriate to assign these 'overlap wards' on the basis of their designated TTWA, with two exceptions.

The two exceptions were the area adjoining Fermanagh LGD, which is discussed below, and the Pomeroy and Stewartstown area just within the southern border of Cookstown LGD. The scale and direction of migration flows in Pomeroy and Stewartstown area is sufficient to support assignment of this area to the housing market area centred on the Dungannon TTWA63.

⁶¹ In addition, to ensure that migration flows were based on a minimum reasonable number of cases, we discounted flows that were based on less than 100 people or (if the number was greater) less than 2% of the local population for each cluster of wards. Population numbers are based on NISRA 2003 small area population estimates.

⁶² Wards that appear to lack a significant link tend to be remote wards that are highly self-contained and display few if any connections to elsewhere. Examples are Swatragh, Draperstown and The Valley in Magherafelt LGD

Omagh LGD

Some 84% of migrants that move within or to Omagh already live in the local authority area and less than 3% of migrants come from any of the neighbouring local authority areas.

Evidence of moves between wards in different LGD areas but in close proximity to each other is largely absent. It therefore appears that the Omagh housing market, like the TTWA, marries well with the local authority boundary. Further ward level investigation of migration flows shows at least 10% of those who move within or to 17 out of the 21 wards in Omagh LGD come from Omagh town.

Fermanagh LGD

Close to 90% of migrants that move within or to Fermanagh LGD come from within the area. In only 1 out of 23 wards in this area did the proportions of people moving within the local authority fall below 80%.

In fact considerably higher numbers of people came from Belfast LGD than from any single neighbouring local authority area in the case of all migrants and for migrants aged 25 or above. Nonetheless only 3% of all migrants that moved within or to Fermanagh LGD came from Belfast LGD.

Consistent with the low numbers of migrants that come from neighbouring LGD at the aggregate level, there was only one significant inter LGD flow at a localised level, centred on the area of Brookeborough, Tempo, Fivemiletown and Clogher.

Of the 1,390 people who moved within or to Brookeborough and Tempo over half already lived in the area, 14% came from Fivemiletown and Clogher in Dungannon LGD and 10% came from Enniskillen. This lends support to the proposal that the housing market boundary for Fermanagh corresponds to the TTWA and extends into the southern tip of Dungannon.

Summary

The map below summarises our proposed housing market areas and how they compare with the 2001 TTWAs.

It is important to reiterate that there are some more rural areas and communities in some of these proposed housing market areas that show very little connection to the nearest local employment centre or elsewhere in Northern Ireland. Although for practical reasons it makes sense to include them in a housing market area, we would caution that future analysis and policy should take account of the unaligned character of these localities.

interpreting results

Introduction

The previous five sections have investigated housing market boundaries using data on actual patterns of residential movement. However, as discussed in section 2, the definition of housing market areas should also be informed by local knowledge wherever possible.

Accordingly, the underlying research approach and the boundaries that emerged through data analysis were discussed with a range of stakeholders agreed with the Northern Ireland Housing Executive. The stakeholders brought both national and local expertise to bear on our proposals. All of the meetings conducted took place in February and March 2009.

The Consultation Process

Meetings involved a presentation of our approach and results followed by exploration of the following key issues:

- Do the HMA boundaries identified for Northern Ireland look broadly correct and defensible?
- Do the migration patterns found within HMAs accord with local knowledge and expertise?
- Would the proposed boundaries be improved by any fundamental changes given that the study brief was focused on the identification of major HMAs rather than more localised sub-markets?
- Should HMA boundaries be defined as contiguous or overlapping?
- Would it be expedient to align HMAs with local government districts including the new boundaries arising from the Review of Public Administration?

The stakeholders we engaged with were as follows:

- NIHE local planners
- Analysts from the Departments for Social Development and Regional Development
- Ministerial Advisor (DSD)
- University housing analysts
- DOE local planners
- NISRA social statisticians.

Summary of views on the general approach taken to defining HMA

The consultation process established that there was general support for our approach. Stakeholders recognised that local data availability had played an important role in determining the overall approach we adopted, but also emphasised the significance of recent Northern Ireland housing market dynamics, investment in transport infrastructure, the location of large new build sites, and cross-border migration flows as drivers of change in housing market geography. These views are explored in more detail below.

Stakeholders noted that approaches similar to ours had been effective elsewhere in the UK for the identification of HMA. Moreover, the underlying TTWAs were confirmed as a reasonable starting point for analysis, and our proposed modifications met with general approval as sensible reflections of the recent path of housing market developments.

Surprise was expressed by a few at the volume of migration captured by the CHI between September 2004 and December 2007. However our audit work on the data and confirmation from NISRA that the numbers involved were accurate addressed the concerns raised in this regard.

One stakeholder articulated a concern that backward looking analysis of boundaries presents a fundamental difficulty for in that planners want to make decisions consistent with needs and demands going forward into the future.

However, as already noted and despite these caveats, stakeholders were in general support of the research method and the proposed boundaries that it yielded. Common responses were that the findings seemed 'sensible', 'intuitive' and 'unsurprising'. Moreover, stakeholders tended to support the use of contiguous rather than overlapping boundaries and identification of functional boundaries distinct from other administrative boundaries.

Cross-border Influences

A number of stakeholders raised an issue with regard to the overall stability of some of our proposed boundaries. In particular, some suggested that the data used in our work relates to a period when the housing sector was booming, and that subsequent changes in the nature of cross-border flows (not just of people but also of capital) associated with more recent recessionary conditions may lead to further change in the geography of housing markets close to the border with ROI.

More specific expectations of cross border connections noted by stakeholders were that:

- The housing market in Derry is influenced by housing developments in Donegal.
- The Newry housing market is influenced by housing developments in Dublin.

Reference was made to a general growing economic interdependence between Northern Ireland and ROI. Stakeholders referred to large volumes of cross border shopping trips to take advantage of exchange rate movements, and the existence of considerable indirect evidence of casual and formal employment border hopping (as measured inter alia by the daily presence of cars with ROI license plates in Derry car parks). The key point made was that these economic flows fluctuate strongly over time.

Local planners reported that many people in the past had moved from Derry to new build in Donegal, but more recently this has slowed and (reflecting the present economic climate) there is now considerable unsold new housing in Donegal. They pointed in particular to Letterkenny (the ‘fastest growing town in Europe’) just 20 miles from Derry, a town with excellent road infrastructure and rapid economic as well as population growth. However, it is not at all clear that this growth is inducing migration from Derry. On the contrary, it seems more likely that Letterkenny residents may be working (in quite large numbers) in Northern Ireland.

Elsewhere, stakeholders believed that advances in the Belfast-Dublin transport infrastructure corridor have provided a strong stimulus to new build along the route, serving to extend the Belfast HMA southwards.

However, while articulating a strong requirement to better understand these specific cross-border impacts, stakeholders did not in overall terms suggest they were such as to warrant fundamental amendments to the HMA boundaries developed in this study.

Belfast HMA

It was widely recognised that the Belfast HMA is both dominant in the province and has been extending in recent years, through suburbanisation as a result of the housing boom, but also because of the indirect effects of transport infrastructure investment. However, Belfast’s growth is constrained by topography - the influence of the River Bann means that it can only expand north and southwards.

Stakeholders referred to families moving out from Belfast in order to secure more affordable housing, developers acquiring land along the Belfast-Dublin corridor, and strong growth to the south of the city because of the way new roads etc have been prioritised (e.g. Banbridge). However, the proposed dual carriageway from Larne to Belfast is also expected to strengthen future links between the northern town (and its hinterland) and Belfast.

Stakeholders concurred that the recent suburbanisation process was a response to affordability and choice constraints in the city and its immediate suburbs. It was noted that the city’s population is falling, that households are getting smaller, and that there are more elderly and more single people in the city, the latter increasingly living in private rented accommodation.

Our proposed amendments to the 2001 TTWA boundary to delineate the Belfast HMA also generated discussion on the nature and role of local sub-markets, which are more obviously apparent in the Belfast HMA than probably anywhere else in the province. Estate agents and others make clear distinctions between sub-markets within the city (e.g. South Belfast) and stakeholders did on one or two occasions raise the question of how the notion of a sub-market fits within that of a wider HMA.

More generally however, the ward level analysis conducted to deal with the complexity of the Belfast HMA was widely recognised as producing sensible and plausible overall results.

Derry HMA

There was general agreement that Derry is a relatively self-contained and isolated HMA, partly as a result of local community issues but also because of historically poor transport links. Some were surprised about the absence of migration links with Strabane. The local planning view was of a strong link between Limavady and Derry.

This is another part of the province where long term transport infrastructure investments may in time impact on self-containment, but, for the present, as with HMAs in the west in general, the degree of self-containment remains very high.

Ballymena HMA

There was considerable stakeholder discussion around whether Ballymena is best considered as a self-contained HMA or an area increasingly linked to the north of the Belfast HMA. Stakeholders reported the traditional view was of a self-contained market, dominated by local moves, with a strong inward looking economic structure existing within a culturally distinct setting. A different point made about Ballymena concerned its topography. The area is on a plateau, and is rural and comparatively isolated. At the same time it has an administrative function, a council, a full range of local services and a degree of affluence. Many therefore see it as an area that is relatively self-sufficient.

According to stakeholders, Ballymena is another town and local area likely to benefit from better future road links to Belfast, reducing isolation and perhaps offering opportunities for new housing developments. One stakeholder considered that Ballymena was confronting development and demand pressure and felt that the present research indicated that this was arising from the neighbouring area of Toome.

Administrative Boundaries

As already noted, stakeholders generally did not support the tailoring of HMA boundaries to either existing or proposed council boundaries for administrative convenience. There was also a balance of views expressed that the proposed new LGD boundaries are not functional in the economic geography sense so it should not be surprising that there is only a limited fit between them and the proposed HMAs.

Conclusions

The stakeholders interviewed for this research project confirmed the general thinking and findings generated by data analysis. Broadly speaking, the confirmation of the approach nationally was also reflected by local experts considering specific HMA.

However, the consultation exercise also threw up a number of significant issues for future consideration.

- First, given the proposed HMAs were effectively identified during a period of market expansion and rapid growth, future work should pay particular attention to whether different market conditions may in time affect the conclusions drawn.
- Second, cross-border migration and economic flows are increasingly important and the broader housing ramifications of these interactions need to be better understood.
- Third, there is a need to think carefully in advance about the impact that new transport infrastructure may have on the longer run development of housing markets, TTWAs and more generally on economic linkages across space.

Finally, it should be noted that while stakeholders supported the research and its findings, the use of CHI data for defining HMAs, and the logic of defining thresholds for measuring self-containment and the significance of housing market influence between two locales, this type of analysis is novel in a Northern Ireland setting. This, together with the interest of many in sub-market as much as overall HMA structure, indicates that care will be needed in clearly communicating the findings from this study to other interested parties.

conclusions & recommendations

This final section is in two parts.

First, we briefly summarise the main outcomes of the research.

Second, we make a number of observations and recommendations that arise from having undertake the study.

Summary of the main outcomes

Our commission was to establish a set of housing market area (HMA) boundaries that will provide the geography for subsequent strategic analysis of housing markets in Northern Ireland by local planning teams.

The Northern Ireland Housing Executive was prompted to make this commission on the basis of prior work showing a need for a stronger analytical basis for housing investment in Northern Ireland.

A housing market is typically conceived to operate across a spatially defined area that reflects the housing preferences of most households searching for housing without changing employment, and can therefore be defined as a geographical area where most people both live and work and where most people moving home (without changing job) will have sought a house. However, while this provides a basis for practical measurement of HMA, doing so still requires considerable judgement. Moreover:

- HMA can be quite large, and there can be distinctive structures within a given HMA relating to the much less well-defined idea of housing sub-markets.
- HMA can be fuzzy at the edges, and the sphere of influence of two or more HMAs can in practice overlap somewhat.
- HMA are dynamic over time, and can be more or less stable depending on both market factors (for example chronic undersupply and affordability can lead to a HMA spatially growing over time) and policy factors (such as decisions on major transport investments)

For all these reasons judgement is necessarily required in identifying HMA, and there may be legitimate cause for disagreement as to the boundaries of specific HMA in some instances.

The approach we took to the specification of HMA in Northern Ireland reflects both good practice elsewhere in the UK, and the specific possibilities afforded by data availability. We started from the hypothesis that the 11 travel to work areas derived from the 2001 Census were a reasonable proxy for housing market areas.

Having extensively examined available data our view is that in general the TTWA of Northern Ireland do, with some adjustments, provide a reasonable approximation for housing market areas in Northern Ireland. Specifically:

- Over time the **Belfast** HMA has been extending its influence northwards and southwards into adjacent TTWAs. It now includes all of Larne local government district (LGD), and all but 1 ward of Antrim LGD
- To the south of the Belfast HMA lie the two distinctive housing market areas centred on **Craigavon** and **Newry** respectively, although both are subject to some degree of overlap with the Belfast HMA.
- The **Ballymena** housing market is more tightly drawn than the corresponding TTWA, and is subject to growing influence from the Belfast housing market.
- The **Coleraine** housing market extends beyond the Coleraine TTWA and includes the whole of Coleraine LGD and almost all of Ballymoney LGD, and Moyle LGD. However a few more remote wards in the south of both LGDs remain somewhat more connected to the Ballymena housing market.
- The housing market boundaries of both **Derry** and **Strabane** are aligned with their respective TTWAs.
- The four TTWAs covering **Omagh**, **Mid-Ulster**, **Dungannon** and **Enniskillen** provide a reasonable approximation of the respective overarching housing market areas in this part of Northern Ireland.

There is broad stakeholder consensus on these proposed HMA boundaries.

Concluding Thoughts and Recommendations

Our study is the first that has sought to delineate HMAs in Northern Ireland in a way consistent with good practice elsewhere in the UK. It has been a highly labour-intensive exercise. Our work shows that the geography of HMAs across Northern Ireland particularly in and around Belfast continues to evolve. There is no reason to think that in future this will not continue.

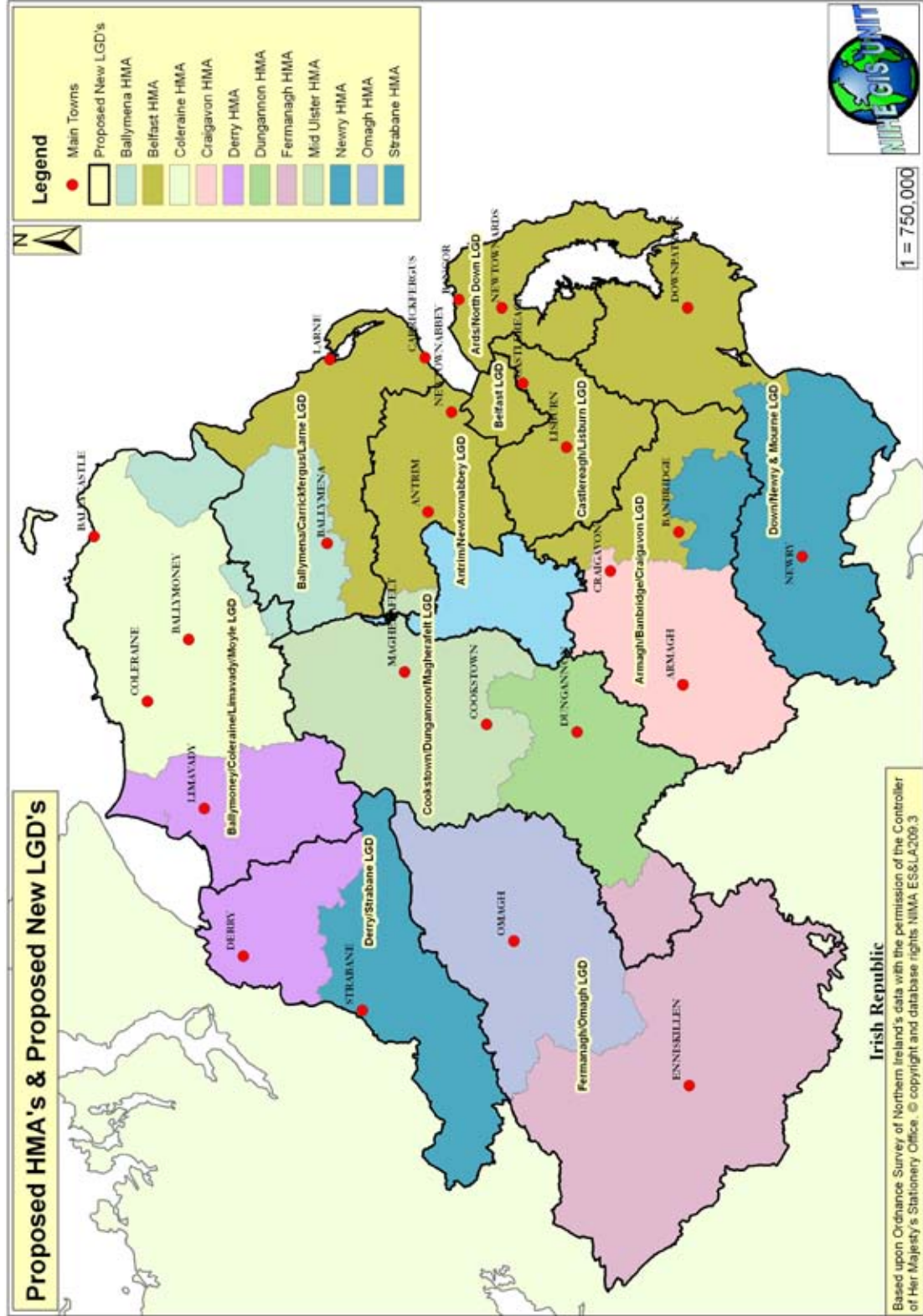
While in our view the HMA we have identified will remain sufficient for the purpose of undertaking subsequent housing market analysis for a number of years, it will be necessary at some point in the future to repeat the exercise and to do so efficiently. We recommend that the Northern Ireland Housing Executive thinks in terms of utilising results from the 2011 Census in about five years time. However, it seems likely that CHI data will also remain a core part of the future study of HMA boundaries in Northern Ireland, and it will stand local planners in good stead if steps are taken now to ensure that it is available on a regular basis for this purpose, that protocols are in place for data access, audit and cleaning, and that training is available for those that will have the task of interrogating it⁶⁴.

⁶⁴ Such training should naturally also cover the use of Census data for defining HMA.

A second key point concerns maps, GIS and presentation of the research. We have included maps of proposed HMA in this report, and their role in aiding comprehension is undeniable, but there is great scope for using them to a greater extent in future, particularly for developing overlays on basic HMA maps. These could include significant topography that identifies natural market boundaries and proposed major transport infrastructure developments that may alter commuting patterns around Northern Ireland. At the same time, it is essential that the HMAs can be overlain on existing and proposed administrative boundaries, as well as other key geographies such as the housing tax areas used by the VLA. We recommend that the Northern Ireland Housing Executive build on our work by exploring these possibilities as a priority.

A final recommendation relates to a need to better understand cross-border flows between Northern Ireland and ROI, both in terms of household movements but also with respect to the housing and related impacts of economic transactions between the two countries. Currently, there is little hard data and a disproportionate need to rely upon anecdotal evidence. There is a strong economic, housing and planning case for further research in this regard. This is particularly true for the Derry and Newry HMA, but several of the stakeholders contacted in the course of this study indicated that there are wider province-wide issues that need to be understood better also.

Figure 10.2 Proposed HMA's & Proposed New LGD's



appendix 1:

alternative approaches for establishing HMAs

Three main approaches are used to identify and define HMA boundaries:

- Use of Travel To Work Areas (TTWAs) to approximate or as a starting point for defining HMAs.
- Examination of household migration patterns and degree of area self -containment
- Examination of centre to periphery household flows

Housing market areas defined on the basis of TTWAs

Strengths

- TTWA are generally considered to produce results that in most (but not all parts) of the country are broadly consistent with local understanding of HMAs.
- Official and good practice guidance in other parts of the UK suggests TTWAs can offer an appropriate starting-point for analysing housing market related household migration flows.

Limitations

- UK boundary constraints continue to be imposed in the definition of TTWAs with the result the TTWAs do not cross the Northern Ireland - ROI border.
- TTWA boundaries represent a 'snapshot' of commuting patterns in 2001 and probably do not fully represent current commuting patterns.
- TTWAs may be more narrowly defined than housing market areas as they are based on the commuting flows of adults whereas the more appropriate unit for measuring and defining a HMA is the household. Relative to household based analysis the use of adult based commuting flows gives greater weight to second earners who may commute shorter distances than the household reference person.

Household migration patterns and degree of area self containment

This approach is based on the assumption that a functional housing market exists where a high proportion of moving household origins and destinations are contained within a specified boundary. This approach therefore requires an analysis of the origin of moving households and the location of their new homes. The degree of self-containment can be quantified in two ways:

⁶⁵ In England, ONS found it necessary for a small number of Census Area Statistics (CAS) wards to be merged with larger neighbouring wards in order to satisfy output thresholds. In Northern Ireland 2001 Census outputs were based on the 582 electoral wards in existence in 2001, all of which exceeded the resident and household threshold so no such merging was necessary.

Origin based self-containment: This involves establishing the number of households moving in a given area that previously lived within it, as a proportion of all households that bought in the area. For example if 600 of 1,500 vacated and newly constructed properties were purchased by a household that previously lived in an area this would be equivalent to a 'self containment' rate of 40%.

Destination based self-containment: This involves establishing the number of households moving in a given area that previously lived within it, as a proportion of all purchasers that originated in the area, For example if 1,000 purchasers originate from an area, of which 600 move to another house in that area, this would indicate a destination based 'self containment' rate of 60%.

Strengths

- Self-containment analysis is an intuitively understandable approach to HMA definition.
- Data is available in most parts of the UK to undertake an investigation of this sort.

Limitations

- As with TTWAs, the size of housing market areas are very sensitive to the threshold employed. Guidance in England suggests a threshold of 70% but this is simply a reiteration of the threshold used to define the 1991-based TTWAs.
- Again, as with the TTWA approach, there is a need to identify an appropriate minimum number of observations to ensure internal coherence and to prevent small areas that sometimes display high degrees of self-containment being treated as HMAs in their own right (as opposed to important sub-divisions). However, official guidance remains silent on this matter.
- There is a risk that the initial unit (or area) selected to test for self-containment is not an economically meaningful functional area.
- Although not unique to this specific method, this approach is open to the criticism that it does not include evidence on the search patterns of hard to reach groups of the population such as homeless and concealed households. However, these groups form a very small proportion of the population and make little, if any, impact on the aggregate picture.

Household migration patterns based on centre to periphery flows

The third approach to defining HMAs is based on direct assessment of flows between major employment centres and neighbouring settlements in order to understand the area of influence each centre has on them. The rationale for this approach is that main urban centres provide access to employment and services, which are key factors in the location choices made by households. Although various thresholds can be used, the most commonly selected threshold is 10%.

Strengths

- The analysis of flows from the centre to local settlements (or groupings of settlements) provides some useful insights into where the centre-periphery linkages are stronger and weaker in different parts of a HMA.

Limitations

- Migration flows can vary in volume over the economic cycle and there is a risk that this method may over state the extent to which the underlying geographical structure of a HMA is changing, depending on where in the cycle measurement occurs.
- In common with the two other approaches discussed the spatial extent of the housing market area is sensitive to the threshold employed.

appendix 2:

using the census for HMA definition in Northern Ireland

Introduction

The 2001 Census contains a wealth of information about the population of Northern Ireland. With coverage close to 100%, it provides more comprehensive information of the migrant population than existing administrative datasets or national survey data.

NISRA produce a range of Census 2001 tables. These include key statistics (KS), standard tables (ST), census area statistics (CAS) and univariate tables (UV). Some of these tables contain migration data, but only in terms of the origin or the destination of migrants - not both. In order to obtain flows between local authorities and other spatial areas of interest it is necessary to use the Census Special Migration Statistics (SMS). This set of tables provides information on the origin and destination of residents.

As with any research of this nature, it is important to be aware of data issues that have a bearing on the interpretation of results. The following paragraphs therefore outline the content of the SMS dataset and discuss adjustment measures used by the Office for National Statistics (ONS) and NISRA to reduce disclosure risk and other issues that have shaped the selection of the data used and the analysis undertaken.

Data description

The 2001 SMS tables are based on a 100% sample and report information about the origins, destinations and characteristics of the migrant population. This includes current (but not previous) tenure.

The SMS are reported at three sub-area levels that contain varying degrees of detail. These three sub-areas are output areas (OAs), wards⁶⁵ and in the case of Northern Ireland parliamentary constituency.

⁶⁵ As table A2.1 shows, the degree of detail decreases with geographical scale. As a result, whilst smaller areas can be joined together to form larger areas, the descriptive detail is limited to that applicable to the smaller area.

Table A2.1: Census SMS tables available at different spatial levels

Output Area	Ward tables	NI parliamentary constituency /GB local authority
Count of individual migrants: by age and gender	Migrants: • Age by gender • Ethnic group by gender	Migrants: • Age by gender • Ethnic group by gender • Family status by gender • Limiting long term illness • Speak Irish etc • Economic activity of migrants aged 16-74 by gender
	Moving groups of migrants: • Wholly moving household and other groups • Tenure • NS-SEC of group reference person (GRP)	Moving groups of migrants: • Wholly moving household and other groups • Tenure • NS-SEC of GRP • Gender and economic activity

The 2001 Census SMS are better than those derived from earlier Censuses:

- The 2001 Census was an integrated Census for the whole of the UK and therefore contains information on the migrant population moving to and from Northern Ireland to the mainland.
- Consistent with the drive for successive censuses to provide more detail in relation to migration, more information is available at a lower spatial level than ever before.
- The recording of students at term-time address rather than vacation address allows moves to and from place of study to be tracked - although this means that it is important to be aware of areas where students moving to and from centres of education heavily influence origin and destination flows.

The Census is therefore an invaluable resource. However, it does have some limitations:

- As with all national censuses, it is not possible to enumerate persons that have left the UK. Thus the SMS do not contain data on anyone who emigrated from Northern Ireland to the Republic of Ireland (ROI) or further afield. It therefore does not provide a complete count of destination flows (or outflows) in the year prior to the Census.
- The inflow of people to an area is also not a precise count. It is necessary to exclude people who had 'no usual address one year ago' as there is no information about their previous whereabouts. In the analysis we undertook it was therefore necessary to omit 10,396 Northern Ireland resident migrants recorded as "no usual address one year ago" from the flows analysis.
- ONS advised that the count of migrants moving to the UK (including Northern Ireland) from abroad should be treated with caution. ONS found a difference of at least 10% when they compared Census international in-migration estimates with estimates derived from other data sources.

- The Census does not provide information on intermediate moves made by households that moved 2+ times in the 12 months prior to Census night. It also does not count people who moved away but then returned to the original address within this 12-month period.
- Action taken by ONS and NISRA in respect of disclosure control to protect confidentiality and in particular the adoption of a small cell adjustment method has had a bigger impact on SMS tables than other Census outputs⁶⁶.

Small Cell Adjustment

To minimise accidental disclosure of information about individuals, Census data for England, Wales and Northern Ireland (but not Scotland) was subject to a process known as ‘small cell adjustment’ (generally abbreviated to ‘SCAM’).

This process involved recoding any cell count that originally was less than 3 to either 0 or 3, although not necessarily to the nearer value. SMS tabular cell outputs with a count of 1 and 2 migrants between a pair of Outputs Areas (or between a pair of wards or a pair of local government districts) were therefore recoded to 0 or 3. Cells with an original value of either 0 or 3 retained these values although it is impossible to distinguish between rounded values and ‘genuine’ 0s or 3s.

It was expected that aggregating individual records into larger areas would ‘cancel out’ distortions and produce a figure close to that which would have been produced by the original data. However, Stillwell and Duke-Williams (2007) identified a significant downward bias. By comparing results for Scotland with the rest of GB they calculated that the probabilities for adjusting the value of 2 to 0 or 3 were 66.7% and 33.3% respectively. In the context of Northern Ireland our analysis confirms that:

- As Census tables were independently adjusted and totals and subtotals in any given table were calculated on the sum of the adjusted constituent counts, the reported numbers for the same population in different Census tables can vary.
- Tables for each SMS spatial level were independently adjusted. Consequently, the migrant count calculated by summing ward data does not correspond exactly to the SMS parliamentary constituency tables or the Local Government District (LGD) migration counts published by NISRA.

In the analysis we have conducted we have minimised the possible distorting effect of the small cell adjustment process and record swapping by focusing on origin and destination flows involving a minimum of 100 persons or 40 households. These thresholds are consistent with those used by NISRA for reporting key census statistics.

⁶⁶ Three separate measures of disclosure control were used. The first was a minimum number of residents and households. For Key Statistics these are 40 households and 100 persons. The second was record swapping whereby a sample of records from one area was swapped with similar records from another area. The third and most significant was small cell adjustments.

Identifying a suitable building block

The basic building block we used for analysing Census migration patterns was 2001 SMS ward tables. In particular, approximations of TTWAs were built up by combining ward tables on a best-fit basis.

The decision to use ward SMS tables in preference to the output area (OA) SMS tables as the basic building block was straightforward because:

- ONS and NISRA have stated that it is not advisable to sum origin or destination matrices for output areas due to the possibility of rounded numbers in specific cells generating inaccurate aggregated totals.
- An examination of a random sample of output area SMS tables indicated that virtually all cells fell within the range 0-3. Although, as discussed below, the effects of SCAM remain apparent even when data for several wards are summed, the problem is nowhere near the same order of magnitude that would have occurred if we had used OA tables.
- The ward SMS tables (unlike the OA tables) contain information on moving groups and information on the socio-economic characteristics of the migrant population.
- The use of wards as the basic building block to define TTWAs ensured consistency with analysis of CHI data, as the latter only includes a ward spatial identifier.

The decision to use ward as opposed to parliamentary constituency SMS outputs as the basic building block for calculating origin and destination flows represented a trade off between reliability and appropriateness. Overall:

- Ward tables proved a better basis than parliamentary constituency tables for approximating TTWAs as wards nest fairly well into the TTWAs.
- It was not possible to construct origin and destination flows for smaller areas using the parliamentary constituency tables.
- It was felt more appropriate to use a single building block to ensure all numbers were founded on the same base values.
- As discussed below, in terms of the proportion of the total population recorded as migrants there is less than 0.5% difference between the ward SMS summed figures and published NISRA LGD figures.
- Likewise, in terms of the proportion of the migrant population moving into an area or moving within an area, the difference between the summed and published figures only exceeded 1.5% in the case of 3 LGDs (see below).

Comparison of aggregated and published migrant population totals

Prior to examining origin and destination flows, migration totals for Northern Ireland and for the existing LGDs were calculated by aggregating ward SMS tables. These summed counts were then compared with published LGD counts to see if there were substantive differences.

Table A2.2 compares the published and summed figures for Northern Ireland as a whole. The published statistics are taken from KS25. To permit like with like comparison, the summed count in table A2.2 includes those recorded as “no usual address 1 year ago”. The SCAM process has clearly led to some discrepancies. However, the effect of summing large numbers of adjusted SCAM ward cells is minimal other than for migrants moving to Northern Ireland from abroad. More specifically:

- The two counts of persons resident in Northern Ireland are identical.
- The count of all migrants and migrants moving within the area differ but this has no impact on the proportion of the population that fall into either sub-group. In both cases, the respective figures are 9.3% and 6%.
- Likewise, there is no difference in the proportion of all migrants recorded as moving from UK or moving within Northern Ireland, at 31% and 64.3% respectively.
- The biggest mismatch is in respect of migrants moving to Northern Ireland from outwith the UK. This reflects the effects of the SCAM process, which was applied to some 90% of the relevant cell counts. This is not particularly problematic as this flow is of minimal relevance in terms of defining HMAs.

Table A2.2: Comparison of NISRA and Study Team Outputs for Northern Ireland

	All persons	Lived at same address one year ago	All migrants (incl no usual address)	Moved into NI from within UK	Moved into NI from outside UK	Moved within area	Moved out of NI
NISRA	1,685,267	1,527,857	157,410	48,770	7,435	101,205	49,710
Study Team	1,685,267	1,528,130	157,137	48,785	7,289	101,063	49,587
Difference	0	273	-273	15	-146	-142	-123
Difference (%)	0.0%	0.0%	-0.2%	0.0%	-2.0%	-0.1%	-0.2%
As proportion of total population (i.e. base of 1,685,267)							
NISRA (%)	100	90.7	9.3	2.9	0.4	6.0	2.9
Study Team (%)	100	90.7	9.3	2.9	0.4	6.0	2.9
Difference (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
As proportion of all migrants (i.e. base of 157,410 for NISRA data)							
NISRA (%)				31.0	4.7	64.3	
Study Team (%)				31.0	4.6	64.3	
Difference (%)				0.0	0.1	0.0	

Tables A2.3 to A2.5 compare the published and summed figures for each existing LGD.

Table A2.3 shows that whereas the numbers of residents in each LGD are consistent, the summed numbers for other variables, including the numbers of ‘all migrants’, do not correspond precisely to the published numbers. In particular, the SCAM process has created a lot of ‘noise’ in the numbers of migrants moving into a LGD from outside UK with the result these numbers are not considered reliable.

Table A2.3: All persons resident in the LGD and those having moved to/from/within LGD in the 12 months prior to Census - numbers

Published Data								
	All persons	Lived at same address one year ago	All in-migrants	Moved into District Council from within UK	Moved into District Council from outside UK	Moved within District Council	Moved out of District Council	
Northern Ireland	1685267	1527857	157410	48770	7435	101205	49710	
Antrim	48366	43357	5009	2252	202	2555	1879	
Ards	73244	66821	6423	2373	136	3914	1963	
Armagh	54263	50035	4228	1074	199	2955	1490	
Ballymena	58610	53578	5032	1287	114	3631	1433	
Ballymoney	26894	24731	2163	748	28	1387	689	
Banbridge	41392	37836	3556	1316	112	2128	1179	
Belfast	277391	243350	34041	10249	1987	21805	10052	
Carrickfergus	37659	33683	3976	1363	149	2464	1239	
Castlereagh	66488	61679	4809	2554	179	2076	3001	
Coleraine	56315	49290	7025	1997	496	4532	1662	
Cookstown	32581	30411	2170	609	64	1497	605	
Craigavon	80671	73155	7516	1850	214	5452	1724	
Derry	105066	95140	9926	1823	552	7551	2054	
Down	63828	58250	5578	1580	222	3776	1625	
Dungannon	47735	44323	3412	870	180	2362	1305	
Fermanagh	57527	53325	4202	876	265	3061	1127	
Larne	30832	28076	2756	712	38	2006	879	
Limavady	32422	28873	3549	1483	159	1907	1063	
Lisburn	108694	99327	9367	3619	478	5270	4419	
Magherafelt	39780	36986	2794	675	84	2035	904	
Moyle	15933	14496	1437	557	64	816	53	
Newry & Mourne	87058	80659	6399	1141	411	4847	143	
Newtownabbey	79995	72286	7709	3212	378	4119	2697	
North Down	76323	68363	7960	3214	372	4374	2802	
Omagh	47952	44189	3763	822	261	2680	1178	
Strabane	38248	35638	2610	514	91	2005	771	

Table A2.3: Continued

	Built Using Ward Flow						
	All persons	Lived at same address one year ago	All in-migrants	Moved into District Council from within UK	Moved into District Council from outside UK	Moved within District Council	Moved out of District Council
	1685267	1528130	157137	48785	7289	101063	49587
	48366	43395	4971	2226	190	2555	1941
	73244	66586	6658	2523	144	3991	2058
	54263	49911	4352	1148	213	2991	1456
	58610	53380	5230	1344	79	3807	1470
	26894	24781	2113	798	30	1285	675
	41392	37861	3531	1316	100	2115	1230
	277391	243789	33602	10215	2002	21385	9643
	37659	33809	3850	1376	127	2347	1171
	66488	61709	4779	2589	182	2008	2891
	56315	49189	7126	2009	466	4651	1714
	32581	30474	2107	605	72	1430	634
	80671	73145	7526	1821	211	5494	1827
	105066	95435	9631	1770	546	7315	2038
	63828	58176	5652	1598	240	3814	1555
	47735	44307	3428	868	185	2375	1252
	57527	53221	4306	877	260	3169	1186
	30832	28168	2664	674	39	1951	840
	32422	28891	3531	1504	152	1875	1068
	108694	99286	9408	3472	460	5476	4536
	39780	36981	2799	660	83	2056	906
	15933	14500	1433	570	75	788	499
	87058	80698	6360	1098	390	4872	1472
	79995	72220	7775	3173	336	4266	2736
	76323	68237	8086	3211	351	4524	2853
	47952	44276	3676	836	269	2571	1143
	38248	35705	2543	504	87	1952	793

Table A2.4: All persons resident in the LGD and those having moved to/from/within LGD in the 12 months prior to Census - as % of total population

Published Data								
	All persons	Lived at same address one year ago	All in-migrants	Moved into District Council from within UK	Moved into District Council from outside UK	Moved within District Council	Moved out of District Council	
Northern Ireland	1685267	90.7	9.3	2.9	0.4	6.0	2.9	
Antrim	48366	89.6	10.4	4.7	0.4	5.3	3.9	
Ards	73244	91.2	8.8	3.2	0.2	5.3	2.7	
Armagh	54263	92.2	7.8	2.0	0.4	5.4	2.7	
Ballymena	58610	91.4	8.6	2.2	0.2	6.2	2.4	
Ballymoney	26894	92.0	8.0	2.8	0.1	5.2	2.6	
Banbridge	41392	91.4	8.6	3.2	0.3	5.1	2.8	
Belfast	277391	87.7	12.3	3.7	0.7	7.9	3.6	
Carrickfergus	37659	89.4	10.6	3.6	0.4	6.5	3.3	
Castlereagh	66488	92.8	7.2	3.8	0.3	3.1	4.5	
Coleraine	56315	87.5	12.5	3.5	0.9	8.0	3.0	
Cookstown	32581	93.3	6.7	1.9	0.2	4.6	1.9	
Craigavon	80671	90.7	9.3	2.3	0.3	6.8	2.1	
Derry	105066	90.6	9.4	1.7	0.5	7.2	2.0	
Down	63828	91.3	8.7	2.5	0.3	5.9	2.5	
Dungannon	47735	92.9	7.1	1.8	0.4	4.9	2.7	
Fermanagh	57527	92.7	7.3	1.5	0.5	5.3	2.0	
Larne	30832	91.1	8.9	2.3	0.1	6.5	2.9	
Limavady	32422	89.1	10.9	4.6	0.5	5.9	3.3	
Lisburn	108694	91.4	8.6	3.3	0.4	4.8	4.1	
Magherafelt	39780	93.0	7.0	1.7	0.2	5.1	2.3	
Moyle	15933	91.0	9.0	3.5	0.4	5.1	3.4	
Newry & Mourne	87058	92.6	7.4	1.3	0.5	5.6	1.6	
Newtownabbey	79995	94.7	10.1	4.2	0.5	5.4	3.5	
North Down	76323	89.6	10.4	4.2	0.5	5.7	3.7	
Omagh	47952	92.2	7.8	1.7	0.5	5.6	2.5	
Strabane	38248	93.2	6.8	1.3	0.2	5.2	2.0	

Table A2.4: Continued

	Built Using Ward Flow						
	All persons	Lived at same address one year ago	All in-migrants	Moved into District Council from within UK	Moved into District Council from outside UK	Moved within District Council	Moved out of District Council
	1685267	90.7	9.3	2.9	0.4	6.0	2.9
	48366	89.7	10.3	4.6	0.4	5.3	4.0
	73244	90.9	9.1	3.4	0.2	5.4	2.8
	54263	92.0	8.0	2.1	0.4	5.5	2.7
	58610	91.1	8.9	2.3	0.1	6.5	2.5
	26894	92.1	7.9	3.0	0.1	4.8	2.5
	41392	91.5	8.5	3.2	0.2	5.1	3.0
	277391	87.9	12.1	3.7	0.7	7.7	3.5
	37659	89.8	10.2	3.7	0.3	6.2	3.1
	66488	92.8	7.2	3.9	0.3	3.0	4.3
	56315	87.3	12.7	3.6	0.8	8.3	3.0
	32581	93.5	6.5	1.9	0.2	4.4	1.9
	80671	90.7	9.3	2.3	0.3	6.8	6.8
	105066	90.8	9.2	1.7	0.5	7.0	1.9
	63828	91.1	8.9	2.5	0.4	6.0	2.4
	47735	92.8	7.2	1.8	0.4	5.0	2.6
	57527	92.5	7.5	1.5	0.5	5.5	2.1
	30832	91.4	8.6	2.2	0.1	6.3	2.7
	32422	89.1	10.9	4.6	0.5	5.8	3.3
	108694	91.3	8.7	3.2	0.4	5.0	4.2
	39780	93.0	7.0	1.7	0.2	5.2	2.3
	15933	91.0	9.0	3.6	0.5	4.9	3.1
	87058	92.7	7.3	1.3	0.4	5.6	1.7
	79995	94.6	10.2	4.2	0.4	5.6	3.6
	76323	89.4	10.6	4.2	0.5	5.9	3.7
	47952	92.3	7.7	1.7	0.6	5.4	2.4
	38248	93.4	6.6	1.3	0.2	5.1	2.1

Table A2.5: All persons resident in the LGD and those having moved to/from/within LGD in the 12 months prior to Census

Difference total poplation percentages								
	All persons	Lived at same address one year ago	All in-migrants	Moved into District Council from within UK	Moved into District Council from outside UK	Moved within District Council	Moved out of District Council	
Northern Ireland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Antrim	0.0	-0.1	0.1	0.1	0.0	0.0	-0.1	
Ards	0.0	0.3	-0.3	-0.2	0.0	-0.1	-0.1	
Armagh	0.0	0.2	-0.2	-0.1	0.0	-0.1	0.1	
Ballymena	0.0	0.3	-0.3	-0.1	0.1	-0.3	-0.1	
Ballymoney	0.0	-0.2	0.2	-0.2	0.0	0.4	0.1	
Banbridge	0.0	-0.1	0.1	0.0	0.0	0.0	-0.1	
Belfast	0.0	-0.2	0.2	0.0	0.0	0.2	0.1	
Carrickfergus	0.0	-0.3	0.3	0.0	0.1	0.3	0.2	
Castlereagh	0.0	0.0	0.0	-0.1	0.0	0.1	0.2	
Coleraine	0.0	0.2	-0.2	0.0	0.1	-0.2	-0.1	
Cookstown	0.0	-0.2	0.2	0.0	0.0	0.2	-0.1	
Craigavon	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	
Derry	0.0	-0.3	0.3	0.1	0.0	0.2	0.0	
Down	0.0	0.1	-0.1	0.0	0.0	-0.1	0.1	
Dungannon	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
Fermanagh	0.0	0.2	-0.2	0.0	0.0	-0.2	-0.1	
Larne	0.0	-0.3	0.3	0.1	0.0	0.2	0.1	
Limavady	0.0	-0.1	0.1	-0.1	0.0	0.1	0.0	
Lisburn	0.0	0.0	0.0	0.1	0.0	-0.2	-0.1	
Magherafelt	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	
Moyle	0.0	0.0	0.0	-0.1	-0.1	0.2	0.2	
Newry and Mourne	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Newtownabbey	0.0	0.1	-0.1	0.1	0.1	-0.2	-0.1	
North Down	0.0	0.2	-0.2	0.0	0.0	-0.2	-0.1	
Omagh	0.0	-0.2	0.2	0.0	0.0	0.2	0.1	
Strabane	0.0	-0.2	0.2	0.0	0.0	0.1	-0.1	

Table A2.5: Continued

	Difference as % all migrant population						
	All persons	Lived at same address one year ago	All in-migrants	Moved into District Council from within UK	Moved into District Council from outside UK	Moved within District Council	Moved out of District Council
				-0.1	0.1	0.0	
				0.2	0.2	-0.4	
				-0.9	0.0	1.0	
				-1.0	-0.2	1.2	
				-0.1	0.8	-0.6	
				-3.2	-0.1	3.3	
				-0.3	0.3	-0.1	
				-0.3	-0.1	0.4	
				-1.5	0.4	1.0	
				-1.1	-0.1	1.2	
				0.2	0.5	-0.8	
				-0.6	-0.5	1.1	
				0.4	0.0	-0.5	
				0.0	-0.1	0.1	
				0.1	-0.3	0.2	
				0.2	-0.1	-0.1	
				0.5	0.3	-0.7	
				0.5	-0.1	-0.4	
				-0.8	0.2	0.6	
				1.7	0.2	-1.9	
				0.6	0.0	-0.6	
				-1.0	-0.8	1.8	
				0.6	0.3	-0.9	
				0.9	0.6	-1.4	
				0.7	0.3	-1.0	
				-0.9	-0.4	1.3	
				-0.1	0.1	0.1	

Table A2.4 compares the proportion of the total population that fall into each migrant sub-group. Although the precise numbers differ, the proportions of the population that fall into each sub-group are almost identical. As table A2.5 shows, published and summed LGD based figures are all within 0.5% of each other and in most instances the figures are within 0.2% of each other.

The columns on the right-hand side of table A2.5 summarise the difference between the summed and reported percentages of 'all migrants' that moved into or within each LGD. It shows that:

- The summed and reported LGD percentage figures differ by no more than 1% for 17 out of the 26 LGDs. In a further 6 LGDs the difference does not exceed 1.5%.
- There are 3 LGDs where the summed and published proportions of migrants moving into the district and/or moving within the district vary by 1.6% to 3.3%. The 3 districts are Ballymoney (where the difference is 3.2% and 3.3%), Moyle (1% and 1.8%) and Lisburn (1.7% and 1.9%).
- In the case of Ballymoney and Moyle this reflects a tendency for the summed numbers for LGDs with smaller populations (and small migrant populations) to differ more sharply from the reported figure. This tendency is consistent with the impact of the SCAM process.
- In the case of Lisburn we found no obvious explanation for the difference. We can therefore only assume it is a result of the SCAM process and other data control procedures.

More positively, as the Lisburn LGD forms part of the Belfast Metropolitan Urban Area and the Belfast TTWA, any possible distortion in the data is unlikely to have a substantive impact on our analysis.

Eliminating double counting and other technical considerations

Summing small area tables to a higher spatial level can lead to over-estimation of the true level of migration because of the risk of double counting people who move between two places. It was therefore necessary to take steps to remove people moving between wards within a single TTWA. A comprehensive set of look up tables was employed to assign each ward to a higher spatial area such as an employment centre, LGD and TTWA. These look-up tables were then used to establish the appropriate origin and destination to be ascribed to each paired record.

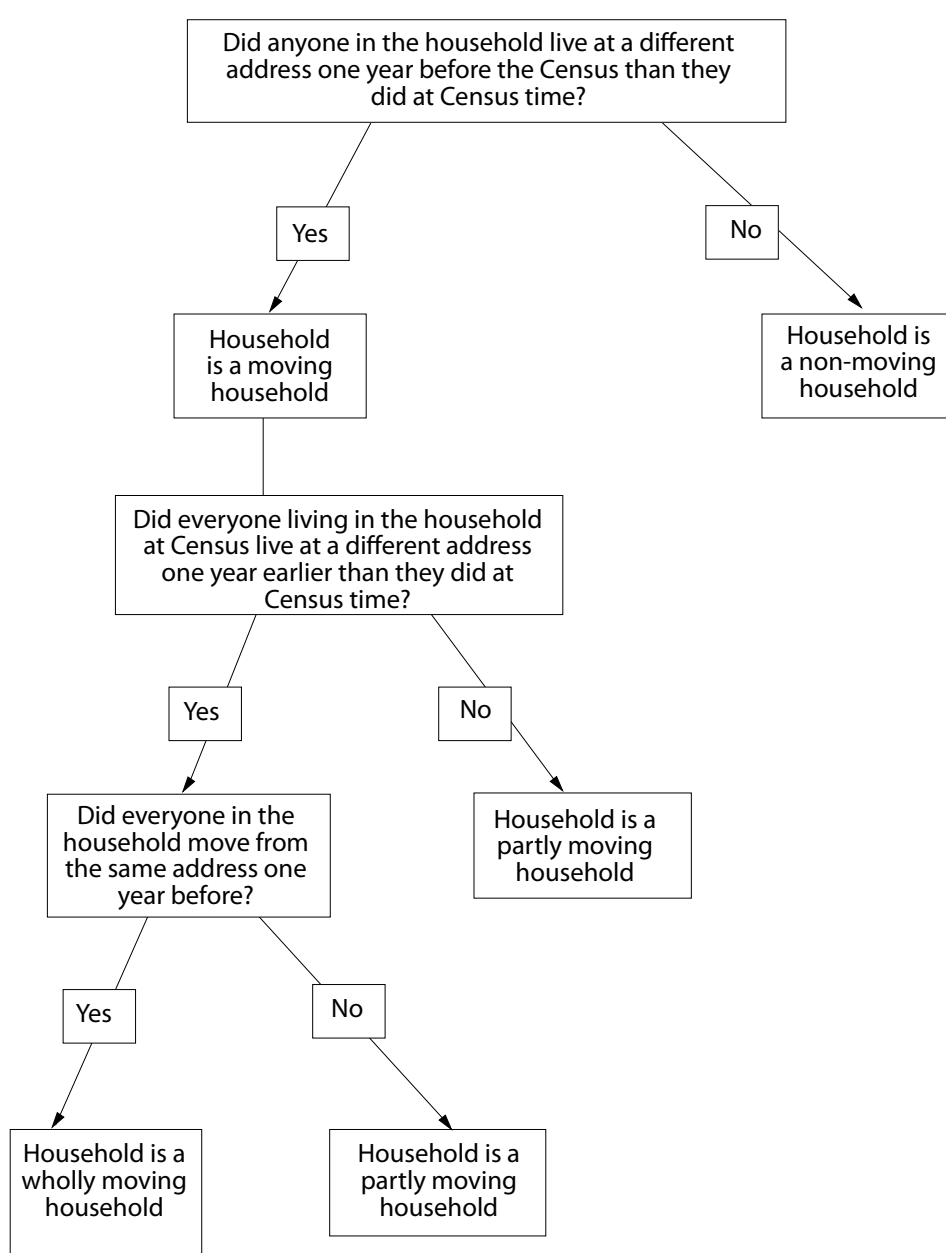
As an additional check we combined the parliamentary constituency SMS tables that best approximated the TTWA for 2 areas. We then added or subtracted the ward cells to obtain as close a match as possible. For example, if the TTWA encompassed two parliamentary constituencies, then the data for the 2 parliamentary constituencies were added together and then data for any wards in the TTWA but not in either parliamentary constituency were added. This approach did not produce any substantive differences.

Other Issues that shaped analysis

Studies that have used Census SMS data to define housing market areas have typically concentrated on the origin and destination of all individual migrant flows, although some studies have discounted children (0-16 years). However, it has been shown that different sub-groups of the population have

distinctive propensities to move house (Champion and Ford, 2001). An important dimension of this study therefore involved examining the feasibility of taking account of the migration patterns of different sub-groups of the population in order to inform the preparation of HMA boundaries.

Figure A2.1: Moving Households and Moving Groups



Moving groups and tenure

The 2001 Census introduced the concept of the moving group. Figure A2.1 provides an exposition of a moving group and how it is sub-divided into a 'wholly moving household' and 'other moving' groups. In essence:

- A household is categorised as 'wholly moving' where all members of the household are migrants and they all moved from the same previous address. For example a wholly moving household would refer to a family that moved from say Letterkenny to Derry.
- A partial moving household refers to a situation where not all household members moved from the same previous address. For example, a partly moving household might involve those living in a shared flat in Belfast, where one of the occupants previously lived in Coleraine and the other moved from somewhere else in Belfast. This partly moving household would consist of two moving groups, each comprising of a single person.
- Now let us assume that the person from Belfast in the previous example was already living in the flat a year ago. In this instance the two-person household at the time of the Census would still be defined as a partial moving household but would contain only one moving group, which would be the person moving from Coleraine⁶⁷.

Of the 69,249 moving groups identified within Northern Ireland through the 2001 Census, 52% were wholly moving households, of which, 45% were represented by an owner-occupier, 27% by a social renter and 28% by a private renter⁶⁸.

Only 14% of 'wholly moving' households that lived in the social rented sector in 2001 had moved from another LGD. As the movement patterns of social renters are constrained by the distribution of social rented housing stock available for let and the allocation policies of social landlords, it was decided that an examination of the movement patterns of social renters would provide little insight into the boundaries of HMAs.

Likewise, it was felt that an examination of the movement patterns of private renters would provide little insight into the boundaries of HMAs. This was primarily because a substantial share of private renters that moved within Northern Ireland in the pre-Census year had done so in order to pursue educational opportunities.

We also considered the possibility of examining the migration patterns of partial moving households that were living in the owner occupied sector at the time of the 2001 Census. On further investigation we felt there was a strong possibility that a significant proportion of this sub-group were young people moving back to their parental home on completion of their studies. However, the Census did not collect the necessary information to identify recent graduates.

⁶⁷ An added complication is that persons with 'no usual address one year ago' are treated as a moving group of one person. Hence if 3 adults in a single dwelling gave 'no usual address' they would be counted as three separate moving groups.

⁶⁸ The Census collected information on the current tenure of the moving group reference person (i.e. destination address) but not previous tenure. For England and Wales, those "living rent free" are included among the private rented category. For Scotland and Northern Ireland, those "living rent free" have been apportioned between social rented and private rented according to their landlord.

Age and students

Students form a large share of the migrant population, particularly those moving to the Belfast TTWA. The influence of student mobility can be seen in the migration patterns of different age cohorts⁶⁹. The migration flows of the 16-24 and 45+ age groups are likely to be shaped by a change in life stage or pursuit of employment or education opportunities. By contrast, the aggregate movement patterns of those aged 25-44 are more likely to be shaped primarily by housing related considerations.

Communal establishments

The migrant population includes individuals living in private residences and communal establishments, such as care homes, student halls of residence and prisons. The migration patterns of those living in a 'communal establishment' may have little to do with housing related matters but it is not possible to strip out those moving to, from or between communal establishments. However, this should not create too much distortion as:

- Just 6% (9,275) of all migrants were living in communal establishments.
- Around 50% of migrants living in a communal establishment were located in Belfast, Coleraine, Derry or Lisburn districts at the time of the Census. This suggests that a large proportion of this sub-group are students.
- Around 17% had moved from GB in the previous 12 months and in total 27% had lived in GB or abroad 12 months earlier.

Implications for the present study

Whilst analysis of aggregate movement patterns was an essential part of the study, it was also important to isolate the migration patterns of sub-groups where housing related considerations were likely to have been a strong motivator for changing address. We therefore concluded on the basis of the foregoing considerations that the most appropriate approach would be to pay particular attention to the movement patterns of:

- All individual migrants
- Individual migrants aged 25-44
- Wholly moving households
- Wholly moving owner occupier households

⁶⁹ However, it is not possible to identify graduates moving on from their place of study. This is because students who graduated in the pre-census year and changed address are not classified as students unless proceeding to postgraduate or other full-time education.

appendix 3:

using CHI data for HMA definition in Northern Ireland

Description of the Central Health Index

Patient register data in Northern Ireland is known as the Central Health Index (CHI). This information is collected centrally by the Central Services Agency, which is part of the Health and Social Services in Northern Ireland. The information is gathered primarily to inform resource allocation decisions.

Any person that has registered with a different GP within the previous 12 months can be identified and classified as having migrated. It is for this reason that the CHI is the main dataset used by NISRA⁷⁰ to establish internal migration assumptions for informing Northern Ireland demographic estimates and projections.

The CHI is a valuable source of information on inter-censal migration trends. It is worth noting in particular that it:

- Provides a continuous year on year record of migration rather than a snapshot of migration flows in a single year.
- Includes students who register with a doctor or community health centre in the area in which they are studying
- Provides more or less comprehensive evidence of migration flows⁷¹.

In summary, the main difference between Census data and the CHI is that the Census can provide more detail about the composition of migrant households but only for those who move in the year prior to the Census, while the CHI can provide a continuous record of migrant flows but little about migrant household composition. As such, the two sources complement each other and can be used together to build up a reasonable picture of internal migration patterns across Northern Ireland over time.

Quality and comprehensiveness of the Central Health Index

NISRA recently undertook a comparative study of migration estimates obtained from the 2001 Census and CHI data for the same period, and concluded that migration flows across Northern Ireland's local government districts were sufficiently similar to validate the use of the CHI in estimating inter-censal migration flows across Northern Ireland (NISRA, 2005b).

⁷⁰ NISRA is the main provider of official statistics on population and socio-economic conditions in Northern Ireland. The Agency is responsible for the Northern Ireland census of population and administers the civil registration of births, marriages, civil partnerships, adoptions and deaths.

⁷¹ The CHI includes all people allocated an NHS record at birth or granted one in 1939 and almost all people, including those who make use of private health care but remain registered with an NHS GP.

However, the CHI has some general limitations, including:

- 'Previous address' and 'current address' ward codes relate to people that move within Northern Ireland. It is possible that some of the records missing a 'previous address' ward code moved from the Republic of Ireland or from the GB mainland but there is no way to tell if this might be the case.
- Some very short distance moves may not be recorded where it has not been necessary for individuals to register with a new doctor.
- It is not possible to track household (as opposed to individual) moves from one place to another.
- It does not capture individuals that, for whatever reason, were not registered with a GP at the start of a year or end of a year but who moved during the year. Consequently, the CHI under-reports the numbers of children aged 0-12 months plus the numbers of adults that joined or left the armed forces during a year⁷². Neither gap is a major limitation in terms of the aims of our investigation however.
- The date recorded on the CHI refers to the point in time when a person registered with a GP which is not necessarily when they moved. The speed with which people register with a new doctor following a move varies by population sub-group. For example, families and older people tend to re-register quite quickly after moving whereas young men may not register with a doctor until they need to, which may be several months after they have moved.
- It is known that although most students register at their term time address, others may remain registered at their parents' address and some may be registered at both. However, NISRA strip out duplicate records from the dataset.
- The data for September to October each year tends to be affected by the numbers of 17-19 year olds moving to further/higher education for the first time and thus registering with a new GP.

Overall it is evident that both the Census and the CHI suffer from some problems of under-enumeration. In particular, younger people, most commonly younger adult males, are under-recorded by both. However as our analysis gives greatest weight to the movement patterns of those aged 25-44 and (in the case of Census data) owner-occupiers, the impact of this under-enumeration is not a major limitation.

Contents of the CHI dataset provided for analysis

CHI data issued by NISRA covered the period from July 2004 to December 2007 and included just over 580,000 records, each with the following variables:

- Date (month and year of re-registration).
- Age of the person at the point at which the change in address was registered.
- Gender.
- Census static ward for previous location and current location.

⁷² When a person joins the armed forces they are removed from the CHI and only reinstated when they leave the armed services and reregister with a civilian NHS doctor. As a result, adults that leave the armed forces after the start of a year and subsequently move after registering with a NHS doctor during the year are not included. Similarly, adults who moved and then enlisted in the armed forces during the year (and are therefore not on the register at the end of the year) are not captured.

In order to ensure anonymity and preserve confidentiality the CHI dataset provided by NISRA did not contain NHS number (unique identifier for each person), name or postcode for any of the records supplied.

It should also be noted that during the process of cleaning and checking the data it became apparent that data for July and August were incomplete and that a small number of cases did not contain either origin or destination information.

Analysis of CHI Dataset: method used to refine housing market boundaries

Once the dataset had been checked and cleaned, a total of just over 564,000 records were available for analysis of movement patterns. This analysis was conducted at the Northern Ireland, TTWA and LGD area levels.

In addition, in depth analysis of flows was undertaken to refine HMA boundaries, and the rest of this appendix provides the details of this analysis. Essentially, for each LGD, we adopted a four-step procedure, which is summarised in the table below.

Step 1: Analysis of TTWA to ward flows

We began by examining origin-based migration flows. Thus:

- We established the number and proportion of migrants that moved within or to each ward that were accounted for by people originating from the TTWA (minus the LGD) in which a ward was situated⁷³.
- We also assessed whether it was appropriate or necessary to group together 2 or more wards to facilitate analysis. We grouped together wards that made up a small or medium sized settlement. We also tended to group together adjacent rural wards where it was evident that patterns of migration flows were very similar.

⁷³ Four TTWAs are based around a single LGD (Enniskillen, Strabane, Dungannon and Omagh) whilst 2 TTWAs (Derry and Mid-Ulster) are based on 2 LGDs. For these areas we applied the same test to neighbouring authorities to check if there were any other significant cross-border flows.

Table A3.1 Analysis of CHI Data

STEP	Interpretation	Task description
STEP 1	Subject to major influence from the Belfast TTWA	At least 20% of all migrants (and 20% of migrants aged 25-44) come from the Belfast TTWA except LGD in which ward (or cluster of wards) located.
	Subject to major influence from one of the other 10 TTWAs	At least 10% of all migrants (and 10% of migrants aged 25-44) come from TTWA except LGD in which ward (or cluster of wards) located.
	Subject to significant influence from the Belfast TTWA	At least 10% of all migrants (or 10% of migrants aged 25-44) come from the Belfast TTWA except LGD in which the ward (or cluster of wards) located
	Subject to significant influence from one of the other 10 TTWAs	At least 5% of all migrants (or 5% of migrants aged 25-44) come from TTWA except LGD in which ward (or cluster of wards) located.
	Few or no links to the Belfast TTWA	Less than 10% of all migrants (or 10% of migrants aged 25-44) originate from the rest of Belfast TTWA
	Few or no links to one of the other 10 TTWAs	Less than 5% of all migrants (or 5% of migrants aged 25-44) originate from the rest of the TTWA
STEP 2	Origin based flows confirm ward forms part of HMA that corresponds to TTWA	Allocate ward (or cluster of wards) to housing market that corresponds to TTWA if origin-based migration flows exceed major influence threshold for all migrants and migrants aged 25-44
		Allocate ward to housing market that corresponds to TTWA if: <ul style="list-style-type: none"> • Origin-based migration flows exceed significant influence threshold for all migrants, and migrants aged 25-44, and • No significant flow from another TTWA (or adjacent LGD), and • Ward situated adjacent to other wards that experience major or significant influence from TTWA, and where possible and appropriate • Origin based migration flows from employment centres lend further support to the selected HMA
STEP 3	Overlap areas allocated on basis of combination of origin and destination based flows	Allocate ward (or cluster of wards) to housing market that includes the destination of those that previously lived in ward (or cluster of wards) if: <ul style="list-style-type: none"> • Destination-based migration flows exceed 10% threshold, and • No flow to another area outwith the proposed HMA or TTWA exceeds 5%
STEP 4	Ensure migration flows are based on a minimum reasonable number of cases	Discount flows where the number of in-migrants from the rest of the TTWA or neighbouring LGD is less than 2% (or 100 persons if greater) of the local population for ward or cluster of wards
		Wards that cannot be allocated on the basis of origin or destination based flows assigned to HMA that best corresponds to TTWA in which ward situated

- If the proportion of all in-migrants to a ward from the rest of the TTWA exceeded 20% in the case of the Belfast TTWA and 10% in the case of the other 10 TTWAs (see table A3.1) then a ward was deemed to be subject to major influence from the originating TTWA.
- If the proportion of all in-migrants from the rest of the TTWA exceeded 10% in the case of the Belfast TTWA and 5% in the case of the other 10 TTWAs (see table A3.1) then that ward was deemed to be subject to some influence of the originating TTWA.
- To try to ensure that these findings reflected the movement of people most likely to move for housing related reasons, the threshold analysis was repeated for migrants aged 25-44.

Where evidence pointed to a major change in migration patterns since the 2001 Census, we also examined annual flows into each ward or grouping of wards for 2005, 2006 and 2007 separately to see if there was any clear trend (upwards or downwards) in the flow of migrants into a ward from the rest of the TTWA. However, in virtually all instances data on annual trends proved inconclusive.

Reasons for using a different set of thresholds for the Belfast TTWA

Overall, the pattern of influence of the Belfast housing market is more complex than elsewhere in Northern Ireland. The housing market operating in the Belfast conurbation cannot be regarded in the same way as housing markets operating in the rest of Northern Ireland. Analysis confirmed that:

- Migrants originating from Belfast Metropolitan Area and other parts of the Belfast TTWA are more likely to move a considerable distance than migrants originating from elsewhere in Northern Ireland⁷⁴. This is also the case for those aged 25-44.
- There are significant aggregate flows from Belfast LGD into some but not all LGDs that lie within the Belfast TTWA. For instance less than 10% of Carrickfergus LGD or Ards LGD migrants come from Belfast LGD.
- On the other hand, LGDs that have comparatively few inflows from Belfast LGD typically have significant inflows from LGDs with a strong connection to Belfast LGD. For example, just 8% of Carrickfergus LGD migrants come from Belfast LGD but 11% come from Newtonabbey LGD. In turn, 16% of migrants in Newtonabbey LGD originate from Belfast LGD.
- Although some people move from one end of the TTWA to the other (say from Antrim to Down), most inter-district moves are focused on moves between clusters of neighbouring LGDs. This no doubt reflects the fact that many migrants prefer to continue to reside within reasonable proximity of family and friends as well as work.
- Analysis of ward level flows reveals even more complex interactions within the Belfast TTWA. There are differences in the scale of inflows to wards from the Belfast LGD and other neighbouring LGDs that cannot be explained simply by proximity. For example, of the 3,845 people that came to Newtonabbey from Belfast, 18% moved to Mallusk but just 7% moved to the Collinbridge ward that adjoins Belfast LGD.

⁷⁴ It is also worth noting that around 5% of all inflows to other TTWAs originate from Belfast TTWA. This makes it more difficult to judge if moves are likely to be residential related as opposed to employment/quality of life related. Looking at moves of those aged 25 - 44 provides a partial solution to this problem.

No doubt these patterns reflect the complexities of the housing market on the ground. Faced with multiple residential choices, in-migrants, especially more affluent in-migrants, prefer to move to localities with good facilities and transport links and avoid areas they perceive to offer a poor environment. The location of new housing provision may also have some impact on location decisions.

It was therefore concluded that the housing market in the Belfast area operates as a higher-level catchment area which meant that it was necessary to develop an approach that recognised that the Belfast 'regional centre' constitutes an 'upper tier' of movement, which exerts influence over a much larger area than the more localised HMAs that exist elsewhere in Northern Ireland.

Higher thresholds were therefore set to reflect the distinctive nature of the Belfast housing market and to take account of the much greater size of the population in the Belfast TTWA.

Step 2: Assignment of Wards to HMAs on the basis of origin based flows

Having documented origin-based migration flows, step 2 involved appraising the outputs and reaching a decision on which wards should be assigned to which HMA. Again, table A3.1 explains the general criteria that guided our decisions.

- Wards (or clusters of wards) that were subject to major influence from the rest of the TTWA were assigned to the corresponding HMA.
- Wards (or cluster of wards) that were subject to significant influence from the rest of the TTWA were also generally assigned to the corresponding HMA but before this was done we checked whether:
- The ward (or cluster of wards) was subject to a significant inflow from any other TTWA or from any neighbouring LGD. In the case of Strabane for example, checks were undertaken to see if wards experienced a significant inflow from Omagh, Magherafelt, Cookstown and Derry.
- A ward (or cluster of wards) was situated adjacent to other wards that experience major or significant influence from another TTWA. For example our decision to assign Antrim town to the Belfast HMA was partly informed by the fact that wards to the south and north of the town are subject to major or significant influence from the overarching Belfast HMA

Where it was possible to do so, we also undertook supplementary analysis to examine the employment centre that migrants originated from. These employment centres were Belfast, Derry, Craigavon Urban Area (CUA) Antrim, Armagh City, Ballymena, Coleraine, Cookstown, Dungannon, Enniskillen, Newry and Omagh. The main purpose of this analysis was to see if these flows provided additional support for the allocation of wards (or clusters of wards) to the proposed HMA. For example, the decision to assign Antrim to the Belfast HMA was partly informed by the fact that the majority of people that came to the town from elsewhere in the Belfast TTWA came from Belfast Metropolitan area (BMUA).

Step 3: Assignment of overlap areas on the basis of origin and destination flows

For the majority of wards it was possible to assign them to a proposed HMA on the basis of the first two steps.

In some instances, however, origin based migration flows suggested that a ward (or cluster of wards) should be considered 'an area of overlap' where there was significant influence from two or more TTWAs or adjacent LGDs. Although it is important to identify areas where HMA boundaries overlap, we sought in all cases to allocate each overlap area to the HMA to which it appeared to be more strongly connected.

In order to do this we looked at destination-based flows (i.e. where those leaving a ward or cluster of wards moved to). Hence we examined whether the proportion of outflows from wards (or cluster of wards) to another area exceeded specified thresholds (see table A3.1) and thus whether the ward could be assigned to the HMA in which the most popular destination was located. These moves typically occurred between wards (or clusters of wards) in close proximity to each other. To improve the robustness of this evidence we therefore examined both origin and destination based ward-to-ward flows.

In a very few cases origin based flows and destination based flows proved inconclusive. Wards that remained unallocated at this stage were assigned to the HMA that best fits 2001 TTWA. In most of these instances one of the main factors why migration flows proved inconclusive was because of the very low rates of migration to and from these areas.

Step 4: Calculating inflows from the rest of a TTWA or adjoining LGD as a proportion of residents

To determine the strength of influence of the rest of a TTWA⁷⁵ over each individual ward (or cluster of wards), we primarily focused on the number of migrants that moved into an area from the rest of a TTWA expressed as a proportion of the total number of all migrants who moved within or to that area.

However, parts of Northern Ireland, particularly more rural areas, have low rates of residential turnover. Consequently, the numbers of people moving within or to these areas are very small. There is therefore a risk that relying solely on the proportion of migrants that came from the rest of a TTWA or an adjoining LGD could give a false impression of the strength of connection between a cluster of wards and the rest of a TTWA or an adjoining LGD. To minimise this risk we therefore calculated the number of migrants that moved to each area from the rest of a TTWA as a proportion of the resident population.

If the numbers of migrants that came from the rest of a TTWA was equivalent to less than 2% of the estimated local population (or 100 migrants if greater) then these flows were discounted. In other words, if the numbers of migrants was insufficient to provide reliable evidence, these wards (or cluster of wards) were then assigned to the HMA that best corresponds to the TTWA in which they are situated.

The latest small area estimates published by NISRA (which are 2003 based) were used to produce total population estimates for each ward or cluster of wards.

Based on this threshold it appears that some more remote areas and communities have little if any connection to the nearest local employment centre or anywhere else in Northern Ireland. Although it was necessary to assign such areas to a wider HMA we suggest that policies need to take account of the unaligned character of these localities.

⁷⁵ The same was true in terms of assessing the influence of a neighbouring LGD or a major employment centre on a single ward or cluster of wards. Hence flows from neighbouring LGD and employment centres were subject to the same population checks described for TTWAs.

A worked example: Banbridge

The following paragraphs provide a worked example for Banbridge LGD. This proved to be one of these most complex areas to analyse in the sense that it was not possible to determine which ward (or cluster of wards) fell into which HMA solely by examining the origins of migrants that moved within or to each of the Banbridge's 17 wards.

As table A3.2 confirms, NISRA estimate that Banbridge LGD had a population of 46,450 in 2007. Of the 17 wards within Banbridge LGD:

- 3 are located in the Belfast TTWA (Gransha, Dromore North and Dromore South)
- 1 is located in the Craigavon TTWA (Gilford)
- The other 13 wards, including the town of Banbridge itself, are located within the Newry TTWA

At the aggregate Banbridge LGD level, table A2.2 shows that:

- Banbridge LGD has a somewhat open housing market. Around 66% of all migrants (of all ages) moved within the LGD in the period from September 2004 to December 2007. For those aged 25 - 44, this figure was 64%.
- Of the 9,268 people that moved within Banbridge over this period, 1,515 moved within the part of Banbridge LGD that falls within the Belfast TTWA.
- Around 28% of those that moved within or into Banbridge originated from the Belfast TTWA. If those already living in the 3 Banbridge LGD wards that fall within this TTWA are discounted this proportion falls to 18%⁷⁶.
- Around 8% of migrants came from the rest of Craigavon TTWA and a further 6% came from the rest of the Newry TTWA. Just 2% of migrants came from the rest of Northern Ireland.

Looking at ward level flows it is evident that:

- 5 out of 17 wards now have a strong connection to the Belfast TTWA. As the cells highlighted in purple indicate, 5 wards have an inflow from the Belfast TTWA above the major influence threshold of 20%. This includes the 3 wards that currently fall within the Belfast TTWA plus the adjoining wards of Ballyward and Quilly
- The rest of the Craigavon TTWA exerts major influence on Gilford and to a lesser extent Lawrencetown
- The rest of the Newry TTWA exerts major influence on the wards of Loughbrickland and Rathfriland, which are highlighted in blue.

The remaining 8 wards are subject to significant influence from more than one of these 3 TTWAs. More specifically:

- Katesbridge is located in Newry TTWA but has similar rates of inflows from the Belfast TTWA and the rest of Newry TTWA. This pattern was also evident when we restricted analysis to the movement patterns of those aged 25 - 44. However, the numbers of migrants are low and less than 100 people moved to this ward from the Belfast TTWA or the rest of the Newry TTWA.
- Bannside is also part of the Newry TTWA. In proportionate terms it has significant inflows from all 3 TTWAs but again the actual numbers of migrants are low. The housing market in this rural ward is reasonably self-contained and there is much less turnover in this ward than elsewhere in Banbridge LGD. The single largest inflow (as table A3.2 shows) is from the rest of the Belfast TTWA (10%) but for those aged 25 -44 the biggest inflow is from the rest of the Newry TTWA.
- The other 6 wards are situated in and around the town of Banbridge.

As the origin based flows did not provide clear and unambiguous evidence regarding the housing markets each of these 8 wards were most closely connected to, we examined the destination of migrants that moved from these wards, paying particular attention to those migrants that moved to one of the neighbouring LGD areas.

⁷⁷ In terms of Katesbridge it seems possible that the north of this rural ward forms the outer periphery of the Belfast HMA whereas the south of the ward forms the periphery of the Newry HMA. However, available data does not permit us to test if this might in fact be the case.

Table A3.2: Banbridge Worked Example -

Count: based on total population flows September 2004-December 2007	Came from the Belfast TTWA	Came from the rest of the Belfast TTWA (i.e. excluding the 3 Banbridge LGD wards that fall within this TTWA)	Came from the rest of the Craigavon TTWA	Came from the rest of the Newry TTWA	Moved within Banbridge	Came from elsewhere	Total %	Total count of migrants
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	No
Ballydown	13	12	8	8	69	2	100	1400
Ballyward	41	39	3	8	48	2	100	635
Banbridge West	11	9	6	4	77	3	100	930
Bannside	12	10	5	6	77	1	100	593
Dromore North	80	31	5	1	61	2	100	774
Dromore South	84	36	4	0	57	2	100	1270
Edenderry	13	11	8	3	76	2	100	925
Fort	8	7	10	5	76	2	100	753
Gilford	7	6	30	1	59	4	100	798
Gransha	78	48	4	1	42	6	100	884
Katesbridge	20	16	5	15	62	3	100	597
Lawrencetown	8	5	13	3	77	2	100	713
Loughbrickland	9	8	9	15	65	2	100	873
Quilly	40	26	9	1	58	6	100	606
Rathfriland	7	7	2	22	68	1	100	861
Seapatrick	13	12	9	3	74	2	100	709
The Cut	9	7	5	5	80	2	100	673
Total (%) of all migrants	28	18	8	6	66	2	100	13,994
Total count	3,944	2,473	1,121	815	9,268	317		
Migrants as a % of LGD population 2007	8.5	5.3	2.4	1.8	20.0	0.7	30.1	46,450

The 6 Banbridge town wards were grouped together. Analysis of the destination-based flows indicates that of the 520 migrants that moved from Banbridge town to a neighbouring LGD, 62% moved to Craigavon LGD, 19% moved to Newry and Mourne LGD and 18% moved to Lisburn. The proportions were similar for migrants aged 25-44, although the proportions moving to Lisburn and Newry were reversed. This indicates that Banbridge town is connected to Craigavon LGD.

As noted in section 4 of the main report, the eastern corner of Craigavon LGD, which includes the wards of Magheralin, Donaghcloney, Aghagallon and Waringstown, now appears to fall within the Belfast HMA.

We therefore examined movement patterns between wards in Banbridge LGD and Craigavon LGD. This analysis confirmed that there is a concentration of migration flows in the area comprising Banbridge town and the adjoining Lawrencetown ward and eastern corner of Craigavon LGD. In particular:

- Of the 324 migrants that moved from Banbridge town/Lawrencetown to Craigavon LGD, approximately half had moved to the eastern corner of Craigavon LGD.
- Likewise, 52% of the 316 migrants that had moved from the eastern corner of Craigavon LGD to Banbridge LGD had relocated to Banbridge town or the Lawrencetown ward.

Taking into account these findings and the earlier findings in relation to origin-based flows we judged that it was appropriate to locate all 6 Banbridge wards plus the Lawrencetown ward within the Belfast HMA.

By contrast, we concluded that the Gilford ward was more closely connected to the Craigavon HMA:

- Almost 8 out of 10 of the 200 migrants that came from Craigavon LGD to Gilford had not previously lived in the eastern corner area
- Likewise over 80% of the 190 former Gilford residents that had moved to Craigavon LGD choose to relocate to somewhere other than the eastern corner area. Instead, migrants that previously lived in Gilford had preferred to move to Bleary and other wards to the south of the CUA employment centre.

Turning to the other wards that could be considered areas of overlap:

- The large majority of migrants that had previously lived in the Bannside ward and had moved to a neighbouring local government district area had moved to Newry and Mourne, in the main to nearby wards. The very small numbers of out-migrants (60) means it is not possible to draw firm conclusions, but the fact that this ward is part of the Newry TTWA leads us to conclude that Bannside should form part of the Newry HMA.
- Katesbridge out-migrants are equally likely to move to Lisburn LGD or Newry & Mourne LGD.⁷⁶ Thus both origin and destination flows indicate this ward is an area of overlap, although the numbers of migrants are too low to provide clear and unambiguous results. In the absence of data to suggest otherwise, we therefore allocated this ward to the Newry HMA in line with TTWA boundaries.

Based on the above analysis, table A3.3 summarises our views with respect to the relationship of Banbridge LGD to surrounding HMA.

⁷⁶ Although not evident from the table, a large proportion of those that originated from the rest of the Belfast TTWA came from Lisburn LGD. Some 8% of all migrants and 46% of those coming from the rest of Belfast TTWA previously lived in Lisburn LGD.

Table A3.3: Relationship of Banbridge LDG to surrounding HMA

Belfast HMA		Newry HMA	Craigavon HMA
95FF02 Ballyward 95FF05 Dromore North 95FF06 Dromore South 95FF10 Gransha 95FF14 Quilly	95FF01 Ballydown 95FF03 Banbridge West 95FF07 Edenderry 95FF08 Fort 95FF12 Lawrence Town 95FF16 Seapatrick 95FF17 The Cut	95FF04 Bannside 95FF11 Katesbridge 95FF13 Loughbrickland 95FF15 Rathfriland	95FF09 Gilford

Origin	Ballymena	Belfast	Coleraine	Craigavon	Derry	Dungannon	Enniskillen	
Ballymena	4,185	790	278	30	69	12	21	
Belfast	926	64,017	949	1,074	550	156	225	
Coleraine	181	724	6,357	60	156	18	30	
Craigavon	40	1,307	139	8,655	78	156	36	
Derry	36	798	174	46	8,637	21	27	
Dungannon	18	530	69	181	27	2,127	24	
Enniskillen	9	498	43	60	56	72	3,008	
Mid-Ulster	89	486	150	27	102	102	15	
Newry	15	1,164	95	309	50	30	21	
Omagh	3	337	69	24	78	96	96	
Strabane	3	199	36	9	175	6	33	
Total	5,505	70,850	8,359	10,475	9,978	2,796	3,536	

[illegible]

	Mid-Ulster	Newry	Omagh	Strabane	All
	102	6	3	3	5,499
	318	777	132	57	69,181
	126	51	6	18	7,727
	30	356	30	21	10,848
	45	45	48	124	10,001
	162	15	51	6	3,210
	18	9	135	30	3,938
	3,412	21	9	18	4,431
	24	6,101	9	15	7,833
	45	12	2,346	87	3,193
	9	0	136	1,648	2,254
	4,291	7,393	2,905	2,027	128,115

	Mid-Ulster	Newry	Omagh	Strabane	All
	2.4	0.1	0.1	0.1	4.3
	7.4	10.5	4.5	2.8	54.0
	2.9	0.7	0.2	0.9	6.0
	0.7	4.8	1.0	1.0	8.5
	1.0	0.6	1.7	6.1	7.8
	3.8	0.2	1.8	0.3	2.5
	0.4	0.1	4.6	1.5	3.1
	79.5	0.3	0.3	0.9	3.5
	0.6	82.5	0.3	0.7	6.1
	1.0	0.2	80.8	4.3	2.5
	0.2	0.0	4.7	81.3	1.8
	100.0	100.0	100.0	100.0	100.0

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$\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$	$\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$	$\frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$	$\frac{1}{2} \times \frac{1}{5} = \frac{1}{10}$	$\frac{1}{2} \times \frac{1}{6} = \frac{1}{12}$	$\frac{1}{2} \times \frac{1}{7} = \frac{1}{14}$	$\frac{1}{2} \times \frac{1}{8} = \frac{1}{16}$	$\frac{1}{2} \times \frac{1}{9} = \frac{1}{18}$	$\frac{1}{2} \times \frac{1}{10} = \frac{1}{20}$
------------------------------------------------	------------------------------------------------	------------------------------------------------	-------------------------------------------------	-------------------------------------------------	-------------------------------------------------	-------------------------------------------------	-------------------------------------------------	--------------------------------------------------

	Mid-Ulster	Newry	Omagh	Strabane	All
	18	0	0	0	1051
	105	142	45	9	15234
	36	12	3	0	2112
	9	51	3	3	2313
	12	18	15	12	2432
	24	0	6	0	862
	12	0	18	0	938
	596	3	3	0	1022
	6	1019	0	6	1836
	9	3	346	12	727
	3	0	24	305	543
	830	1248	463	347	29070

	Mid-Ulster	Newry	Omagh	Strabane	All
	2.2	0.0	0.0	0.0	3.6
	12.7	11.4	9.7	2.6	52.4
	4.3	1.0	0.6	0.0	7.3
	1.1	4.1	0.6	0.9	8.0
	1.4	1.4	3.2	3.5	8.4
	2.9	0.0	1.3	0.0	3.0
	1.4	0.0	3.9	0.0	3.2
	71.8	0.2	0.6	0.0	3.5
	0.7	81.7	0.0	1.7	6.3
	1.1	0.2	74.7	3.5	2.5
	0.4	0.0	5.2	87.9	1.9
	100.0	100.0	100.0	100.0	100.0

Origin	Ballymena	Belfast	Coleraine	Craigavon	Derry	Dungannon	Enniskillen	
Ballymena	1674	299	117	9	27	3	9	
Belfast	355	25157	279	500	231	51	63	
Coleraine	51	198	2304	24	54	3	12	
Craigavon	13	370	30	3354	24	60	9	
Derry	21	176	72	15	3230	6	9	
Dungannon	3	96	15	45	15	866	15	
Enniskillen	0	113	12	33	18	36	1119	
Mid-Ulster	42	99	69	15	48	51	0	
Newry	6	312	3	141	9	6	9	
Omagh	0	91	12	12	36	33	51	
Strabane	3	33	6	6	85	0	12	
Total	2168	26944	2919	4154	3777	1115	1308	

[illegible]

	Mid-Ulster	Newry	Omagh	Strabane	All
	48	0	0	3	2189
	102	345	39	36	27158
	51	18	3	6	2724
	12	146	15	12	4045
	24	18	6	60	3637
	72	9	24	0	1160
	3	3	81	24	1442
	1413	9	3	9	1758
	12	2396	3	3	2900
	12	6	914	30	1197
	6	0	58	575	784
	1755	2950	1146	758	48994

	Mid-Ulster	Newry	Omagh	Strabane	All
	2.7	0.0	0.0	0.4	4.5
	5.8	11.7	3.4	4.7	55.4
	2.9	0.6	0.3	0.8	5.6
	0.7	4.9	1.3	1.6	8.3
	1.4	0.6	0.5	7.9	7.4
	4.1	0.3	2.1	0.0	2.4
	0.2	0.1	7.1	3.2	2.9
	80.5	0.3	0.3	1.2	3.6
	0.7	81.2	0.3	0.4	5.9
	0.7	0.2	79.8	4.0	2.4
	0.3	0.0	5.1	75.9	1.6
	100.0	100.0	100.0	100.0	100.0

Origin	Ballymena	Belfast	Coleraine	Craigavon	Derry	Dungannon	Enniskillen	
Ballymena	1187	206	81	9	12	9	6	
Belfast	274	19188	237	289	84	27	54	
Coleraine	60	114	1752	12	39	3	3	
Craigavon	4	208	30	2583	12	42	12	
Derry	3	73	30	6	2489	9	6	
Dungannon	0	40	9	33	6	624	15	
Enniskillen	0	64	0	6	0	15	815	
Mid-Ulster	24	57	36	9	18	48	6	
Newry	3	209	9	91	9	15	12	
Omagh	0	58	3	3	9	18	39	
Strabane	0	24	3	6	54	3	3	
Total	1555	20241	2190	3047	2732	813	971	

[illegible]

	Mid-Ulster	Newry	Omagh	Strabane	All
	30	9	0	3	1552
	48	233	30	6	20470
	48	18	3	3	2055
	12	68	6	6	2983
	12	18	15	39	2700
	48	6	15	0	796
	3	6	33	6	948
	928	3	6	3	1138
	3	1777	0	3	2131
	12	6	697	6	851
	9	3	18	500	623
	1153	2147	823	575	36247

	Mid-Ulster	Newry	Omagh	Strabane	All
	2.6	0.4	0.0	0.4	4.5
	4.2	10.9	3.6	4.7	55.4
	4.2	0.8	0.4	0.8	5.6
	1.0	3.2	0.7	1.6	8.3
	1.0	0.8	1.8	7.9	7.4
	4.2	0.3	1.8	0.0	2.4
	0.3	0.3	4.0	3.2	2.9
	80.5	0.1	0.7	1.2	3.6
	0.3	82.8	0.0	0.4	5.9
	1.0	0.3	84.7	4.0	2.4
	0.8	0.1	2.2	75.9	1.6
	100.0	100.0	100.0	100.0	100.0

Origin	Ballymena	Belfast	Coleraine	Craigavon	Derry	Dungannon	Enniskillen	
Ballymena	543	128	36	6	6	0	0	
Belfast	176	9118	159	217	51	9	30	
Coleraine	30	57	697	3	21	3	3	
Craigavon	4	100	12	1121	9	27	12	
Derry	3	15	15	3	874	3	3	
Dungannon	0	33	9	21	3	286	9	
Enniskillen	0	40	0	6	0	6	349	
Mid-Ulster	12	30	30	6	9	30	3	
Newry	0	119	6	61	3	3	6	
Omagh	0	19	0	0	6	3	12	
Strabane	0	15	0	3	21	0	3	
Total	768	9674	964	1447	1003	370	430	

[illegible]

	Mid-Ulster	Newry	Omagh	Strabane	All
	12	0	0	3	734
	33	139	9	6	9947
	15	3	0	3	835
	6	29	3	3	1326
	9	9	3	18	955
	21	6	9	0	397
	0	6	24	3	434
	405	3	0	3	531
	3	754	0	3	958
	3	0	232	3	278
	0	3	0	149	194
	507	952	280	194	16589

	Mid-Ulster	Newry	Omagh	Strabane	All
	2.4	0.0	0.0	1.5	4.4
	6.5	14.6	3.2	3.1	60.0
	3.0	0.3	0.0	1.5	5.0
	1.2	3.0	1.1	1.5	8.0
	1.8	0.9	1.1	9.3	5.8
	4.1	0.6	3.2	0.0	2.4
	0.0	0.6	8.6	1.5	2.6
	79.9	0.3	0.0	1.5	3.2
	0.6	79.2	0.0	1.5	5.8
	0.6	0.0	82.9	1.5	1.7
	0.0	0.3	0.0	76.8	1.2
	100.0	100.0	100.0	100.0	100.0

appendix 5: CHI supporting tables

Table A5.1 CHI Internal Flows: New LA by origin 16-24

Origin	Antrim and Newtownabbey	Ards and North Down	Armagh, Banbridge and Craigavon	Ballymena, Carrickfergus and Larne
Antrim and Newtownabbey	4491	55	182	387
Ards and North Down	55	5423	37	53
Armagh, Banbridge and Craigavon	114	26	8402	52
Ballymena, Carrickfergus and Larne	364	58	34	5202
Ballymoney, Coleraine, Limavady and Moyle	173	90	159	208
Belfast	774	514	592	391
Castlereagh and Lisburn	163	291	356	68
Cookstown, Dungannon & South Tyrone & Magherafelt	123	9	132	58
Derry & Strabane	134	30	104	35
Down and Newry & Mourne	84	76	254	26
Omagh and Fermanagh	102	26	47	10
All	6577	6598	10299	6490

Table A5.2 CHI Internal Flows: New LA by origin 16-24 (%)

Origin	Antrim and Newtownabbey	Ards and North Down	Armagh, Banbridge and Craigavon	Ballymena, Carrickfergus and Larne
Antrim and Newtownabbey	68.3	0.8	1.8	6.0
Ards and North Down	0.8	82.2	0.4	0.8
Armagh, Banbridge and Craigavon	1.7	0.4	81.6	0.8
Ballymena, Carrickfergus and Larne	5.5	0.9	0.3	80.2
Ballymoney, Coleraine, Limavady and Moyle	2.6	1.4	1.5	3.2
Belfast	11.8	7.8	5.7	6.0
Castlereagh and Lisburn	2.5	4.4	3.5	1.0
Cookstown, Dungannon & South Tyrone & Magherafelt	1.9	0.1	1.3	0.9
Derry & Strabane	2.0	0.5	1.0	0.5
Down and Newry & Mourne	1.3	1.2	2.5	0.4
Omagh and Fermanagh	1.6	0.4	0.5	0.2
All	100.0	100.0	100.0	100.0

	Mid-Ulster	Newry	Omagh	Strabane	All
	74	11	5	4	3803
	330	887	278	183	46988
	78	89	41	27	5860
	22	221	17	2	8460
	47	64	37	80	8785
	86	17	52		2845
	12	9	59	24	3303
	3371	11	9	3	4099
	5	4593	3	1	5790
	13	2	1844	66	2411
	3	1	64	1645	2046
	4041	5905	2409	2035	94390

	Mid-Ulster	Newry	Omagh	Strabane	All
	1.8	0.2	0.2	0.2	4.0
	8.2	15.0	11.5	9.0	49.8
	1.9	1.5	1.7	1.3	6.2
	0.5	3.7	0.7	0.1	9.0
	1.2	1.1	1.5	3.9	9.3
	2.1	0.3	2.2	0.0	3.0
	0.3	0.2	2.4	1.2	3.5
	83.4	0.2	0.4	0.1	4.3
	0.1	77.8	0.1	0.0	6.1
	0.3	0.0	76.5	3.2	2.6
	0.1	0.0	2.7	80.8	2.2
	100.0	100.0	100.0	100.0	100.0

Table A5.5 CHI Internal Flows: New LA by origin 25-44

Origin	Antrim and Newtownabbey	Ards and North Down	Armagh, Banbridge and Craigavon	Ballymena, Carrickfergus and Larne
Antrim and Newtownabbey	11602	192	185	1299
Ards and North Down	160	14844	171	171
Armagh, Banbridge and Craigavon	136	142	20251	65
Ballymena, Carrickfergus and Larne	1005	145	122	12265
Ballymoney, Coleraine, Limavady and Moyle	186	85	105	369
Belfast	2418	1787	777	746
Castlereagh and Lisburn	616	1069	1274	233
Cookstown, Dungannon & South Tyrone & Magherafelt	187	46	444	169
Derry & Strabane	62	31	80	41
Down and Newry & Mourne	107	221	829	54
Omagh and Fermanagh	52	40	101	46
All	16531	18602	24339	15458

Table A5.6 CHI Internal Flows: New LA by origin 25-44 (%)

Origin	Antrim and Newtownabbey	Ards and North Down	Armagh, Banbridge and Craigavon	Ballymena, Carrickfergus and Larne
Antrim and Newtownabbey	70.2	1.0	0.8	8.4
Ards and North Down	1.0	79.8	0.7	1.1
Armagh, Banbridge and Craigavon	0.8	0.8	83.2	0.4
Ballymena, Carrickfergus and Larne	6.1	0.8	0.5	79.3
Ballymoney, Coleraine, Limavady and Moyle	1.1	0.5	0.4	2.4
Belfast	14.6	9.6	3.2	4.8
Castlereagh and Lisburn	3.7	5.7	5.2	1.5
Cookstown, Dungannon & South Tyrone & Magherafelt	1.1	0.2	1.8	1.1
Derry & Strabane	0.4	0.2	0.3	0.3
Down and Newry & Mourne	0.6	1.2	3.4	0.3
Omagh and Fermanagh	0.3	0.2	0.4	0.3
All	100.0	100.0	100.0	100.0

[illegible]

	Mid-Ulster	Newry	Omagh	Strabane	All
	212	36	14	10	8468
	383	1383	241	86	108930
	170	36	35	19	10441
	51	642	46	14	19114
	129	45	64	184	17971
	268	39	109	7	6226
	35	25	156	25	6745
	8465	35	70	17	9879
	22	11729	17	10	13724
	61	44	4442	152	5347
	15	8	148	3428	3965
	9811	14022	5342	3952	210810

	Mid-Ulster	Newry	Omagh	Strabane	All
	2.2	0.3	0.3	0.3	4.0
	3.9	9.9	4.5	2.2	51.7
	1.7	0.3	0.7	0.5	5.0
	0.5	4.6	0.9	0.4	9.1
	1.3	0.3	1.2	4.7	8.5
	2.7	0.3	2.0	0.2	3.0
	0.4	0.2	2.9	0.6	3.2
	86.3	0.2	1.3	0.4	4.7
	0.2	83.6	0.3	0.3	6.5
	0.6	0.3	83.2	3.8	2.5
	0.2	0.1	2.8	86.7	1.9
	100.0	100.0	100.0	100.0	100.0

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April 2010

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